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No. 2

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PYELITIS.¹

By F. A. GILL, M.B. (Melbourne),
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THERE is probably no other common disease which so frequently remains undiagnosed as pyelitis.

How many of us meet with cases of pyrexia which for want of a better name we label influenza. By the third or fourth day we are surprised to find the temperature still elevated, the tongue dirty; we suspect a chest condition and in the absence of chest signs we begin to prepare the relatives for a possible diagnosis of enteric fever.

At the end of a week we make an unrewarded hunt for spots and enlargement of the spleen; we may have a Widal test done or a blood culture made. The urine, of course, we have examined at least once and because there is no albumin or sugar we solemnly enter in our notes "urine clear," thereby, unless our luck be unusually strong, obscuring the diagnosis for ever.

By the end of a fortnight or thereabout the temperature is at last normal. We then talk learnedly about aborted enteric fever, para-typhoid, intestinal toxæmia *et cetera*.

¹ Read at a meeting of the Western Australian Branch of the British Medical Association on October 17, 1923.

A fortnight later the patient returns unwillingly to work and comes back in a few days for a tonic. Weeks or months or a year later he has a similar attack. Perhaps as the years roll by he acquires a reputation of "catching influenza every winter."

At about this time he is in a state of chronic ill-health, unable to carry on the simple duties of life without being unduly tired. He may have an occasional slight fever, but otherwise has no definite symptoms. He now changes his doctor and the new man has the patient's teeth extracted, his antra examined with X-rays or washed out. His "septic" appendix is, of course, removed and he is given intestinal antiseptics, blue pill, sulphate of soda *et cetera*. At last he is unable to work, his savings are exhausted and finally he dies a pauper in a public hospital and at the autopsy is found a chronic pyelitis.

The more frequently urine is examined for organisms, pus and blood, the more apparent does it become that pyelitis is an extremely common disease in general practice, both in the acute and chronic forms.

In routine examination of the urine of pregnant women the finding of a trace of albumin is so frequently an indication of pyelitis and not of incipient eclampsia that it should always be followed by the necessary examinations to exclude pyelitis.

BACTERIOLOGY.

By far the most common organism present is the *Bacillus coli communis*. Kidd places its incidence at 83.6%. Other organisms occasionally found alone or more often associated with the *Bacillus coli communis* are *Staphylococcus aureus* or *albus*, streptococci, gonococci or bacilli of the proteus group. The latter were for some reason quite common in renal infections complicating severe gun shot wounds in hospitals in France during the late war.

METHOD OF INVASION.

Considerable controversy has arisen as to the most frequent method of invasion. Kidd has isolated the *Bacillus coli communis* from the blood where it is said to be present for a very short time during rigors and the balance of opinion seems to be strongly in favour of a metastatic infection in the majority of instances rather than an ascending infection.

This is contrary to earlier teaching and is mainly the result of the use of the cystoscope; for patients giving a history of onset with strangury and later pain, tenderness and enlargement of the kidney very frequently have a perfectly normal bladder and catheterization of the ureter reveals infected urine. Furthermore, renal lavage in chronic types stops the bladder symptoms as a rule without any treatment directed to the bladder itself.

That so-called bladder symptoms may be due to a purely renal condition is shown also by their occurrence in cases of renal calculus when the calculus is still in the kidney. A primary cystitis is rare and is nearly always due to infection from below by a posterior urethritis, a prostatitis or dirty instrumentation.

An apparent primary cystitis should always be regarded with suspicion and a pyelitis suspected.

PATHOLOGY.

The pathological changes in a kidney invaded by ascending infection differs considerably from that invaded by a blood-borne infection. In the former the mucous membrane of bladder, ureter and renal pelvis is intensely engorged or even gangrenous, while the renal cortex is the seat of only a toxic cloudy swelling.

In haemogenous infection the cortex contains multiple patches of acute hemorrhagic inflammation with lines and pin points of pus, while the pelvis and ureter are involved but slightly.

PREDISPOSING CAUSES OF RENAL INFECTION.

The predisposing causes of renal infection may be classed as general and local. The general causes are: exposure and chill (very frequent), constipation, diarrhoea, colitis, dietetic indiscretion, acute infection of the throat, infections of other tissues, *exempli gratia*, severe gun shot wounds. The local causes are: anything lowering the local resistance of the kidney, *exempli gratia*, stone, injuries, hydro-nephrosis, either congenital or the result of back pressure, following blocking of the ureter by stone, aberrant arteries or pressure by tumours such as the pregnant uterus, or by stricture of the urethra *et cetera*.

CLINICAL TYPES OF PYELITIS.

Kidd's classification of clinical types is as follows: (i.) Acute single attacks, (ii.) relapsing acute attacks, (iii.) chronic cases with repeated sub-acute attacks, (iv.) chronic ambulatory cases lasting many years, (v.) fulminating cases with gross infarction or gangrene of the kidney.

More simply we may divide cases into: (i.) Fulminating, (ii.) acute and (iii.) chronic.

Fulminating Pyelitis.

In fulminating pyelitis the patient is taken ill very suddenly, sometimes with rigor, often with extremely high temperature up to 41° to 41.6° C. (106° or 107° F.), very rapid pulse and very intense pain over the kidney which may be repeated at intervals. The type of pain suggests infarction which, of course, is just what is taking place.

The kidney enlarges rapidly and is exquisitely tender. The patient may rapidly become moribund and death may occur within forty-eight hours.

There may or may not be urinary symptoms and signs such as strangury and pyuria. Frequently they are not present owing to intense swelling of the ureter causing complete occlusion of the ureter and preventing the passage of urine into the bladder from the infected kidney. When this occurs the urine may contain microscopical traces of blood, but no pus and no organisms, as it is only the urine from the uninfected kidney.

This fact may be very misleading.

Such fulminating cases are fortunately very rare and from all accounts must be much more rare in this country than in America or England, as the text-books of those countries contain lists of seventy-five, thirty-two and twenty-seven cases recorded by individual men. Personally I have never seen a case and have only heard of one in speaking to several other Perth men on the subject.

Fulminating cases have been reported in epidemic form.

Acute Pyelitis.

Acute pyelitis is by far the most common type. It is amazing how often cases will be found when routine examinations are made of the urine for organisms in the presence of pyrexia, the origin of which is in any way obscure, when there is a trace of albumin in the urine or when the kidney is tender to palpation.

The same holds good with the chronic type and it must be true that far more instances are missed than are diagnosed. For remember that there may be no sign or symptom to draw attention to the urinary system. Especially is this true in children, for in children the most common causes of pyelitis are diarrhoea or dietetic indiscretions. These are recognized and treated, but the persisting or recurring fever remains unexplained till a culture from the urine is taken.

Signs and Symptoms of Acute Pyelitis.

Kidd lays down this dictum, that strangury with fever in a female always indicates acute pyelitis and in a male may be due to a pyelitis, a deep urethritis or a prostatitis. The mucous membrane of the

bladder is non-absorbent, hence a pure primary cystitis cannot cause fever. Strangury alone does not necessarily indicate cystitis, for it may exist when cystoscopic examination reveals no cystitis and is a symptom more often of pyelitis than of cystitis.

Frequency of micturition apart from actual strangury is also more often a symptom of pyelitis than that of cystitis.

Hæmaturia is almost a constant sign, though as a rule blood is only present in microscopic quantities. The profuse hæmaturia sometimes seen is often the result of the exhibition of hexamine in acute cases.

Pyuria is always present (except in fulminating cases of obstruction of the ureter), but it is important to remember that pus may be only present in microscopic quantities, hence a test tube examination by *liquor potassæ* or hydrogen peroxide is only of value if a reaction be obtained. This result should be confirmed by microscopic examination.

Bacilluria may, of course, occur without pyelitis, for in acute blood invasions the kidney may act purely as a filter to rid the blood stream of bacteria as in enteric fever without the occurrence of any inflammatory reaction on the part of the kidney. However, bacilluria with pyuria and in the presence of strangury and renal tenderness is proof positive of a kidney infection. The examination of a drop of urine under the microscope often shows the urine to be teeming with organisms, but a failure to find organisms is of no value and must be checked by culture.

The temperature varies considerably according to whether the condition is verging on the fulminating or on the chronic type. As a rule the maximum temperature varies from 38.8° to 40° C. (102° to 104° F.). When the patient has been treated, the fever tends to abate in ten to fourteen days, but may continue for several weeks. Definite daily remissions are the rule especially in cases with frequent rigors.

Rigors are not constantly present. They may appear at the onset only or may be frequent throughout the course of the disease.

The pulse rate increased in proportion to the temperature, a point of great value in differentiating from influenza and enteric fever.

Fever, rigor and rapid pulse may be present for some days before the onset of urinary signs or symptoms; they are evidence of a blood invasion preceding the attack on the kidney. Therefore no reliance can be placed upon an absence of abnormality in the urine during the early days of the disease.

Pain over the kidney region is frequent, but not universal. It is usually an intense ache, rarely colicky, rarely radiating down the ureter as in stone.

Deep tenderness over the kidney is of immense importance and can almost always be elicited. Frequently it may be the only sign or symptom to lead to an investigation of the urine. The urine of every patient with a tender kidney should be examined

microscopically and by culture. Deep renal tenderness in the presence of strangury and pyuria differentiates a pyelitis from a cystitis, from a prostatitis and from a deep urethritis.

Enlargement of the kidney is also frequent; the swelling may be enormous and suggestive of hydro-nephrosis, yet when the attack is over the kidney regains its normal size.

Cædema does not exist in uncomplicated pyelitis. Its presence indicates an underlying nephritis or a failing heart.

Differential Diagnosis of Acute Pyelitis.

In patients with definite renal pain and tenderness and strangury there is little possibility of error, but unfortunately all urinary symptoms may be absent. The rapid onset with general aches and pains resembles influenza, but the high pulse rate is against this diagnosis. Also the prostration is more pronounced in influenza. When the mistake has been made, the persistence of fever should after four or five days lead to an examination of the urine.

Enteric fever is distinguished by the more gradual onset, low pulse rate, more regular temperature, splenic enlargement which is never found in pyelitis, and finally spots together with the response to the Widal test or the growth of typhoid bacilli on culture.

In malaria there is the regular periodicity of the rigors and the relief given by quinine which causes no remission of the temperature in pyelitis. The absence of malarial parasites should also act as a warning. In these three acute infections deep renal tenderness is of course absent, whereas in pyelitis it can practically always be found.

Pyelitis is most frequently confused with cystitis, but renal pain, tenderness or enlargement should make the diagnosis clear, also the fact that a pure cystitis is not accompanied by fever.

Prostatitis and deep urethritis may produce strangury, fever, pyuria and hæmaturia, but the absence of renal pain, tenderness or enlargement should lead one to make a rectal examination for a large tender prostate, and clear urine is frequently found in the second glass with the "two glass test."

The diagnosis between appendicitis and pyelitis may present many traps; for a pure pyelitis may closely simulate a retro-caecal appendicitis. In both the maximum tenderness is in the loin, but failure to find an abnormality on examination of the urine in most cases excludes pyelitis. The catch, however, is that one may be dealing with a fulminating pyelitis with occlusion of the ureter. Again an acutely inflamed appendix frequently sets up an acute right-sided pyelitis and the finding of pus and organisms in the urine leads the surgeon to overlook the acute appendicitis. It used to be taught that the so-called bladder symptoms of appendicitis were due to adhesions of appendix to bladder, but probably they are more often due to an associated pyelitis. Removal of the inflamed appendix nearly always cures the accompanying pyelitis which therefore escapes recognition.

Having arrived at a correct diagnosis of pyelitis there are two other possible conditions which require exclusion, namely stone and hydronephrosis. Both of these are strong predisposing causes of pyelitis, generally of a chronic type with liability to acute exacerbations.

After the acute attack is over, the kidney should be examined by X-rays for stone. Catheterization of the ureter and pelvic lavage will reveal an increased pelvic capacity which can be confirmed by a pyelogram.

Prognosis of Acute Pyelitis.

The majority of patients (according to Kidd 60%) respond readily to medical treatment and complete cure of the infection results in a few weeks, frequently in ten to fourteen days. The remaining 40% continue as chronic cases after the subsidence of the acute attack. A large number of these chronic types are unrecognized, for how many of us control our so-called cures of acute conditions by obtaining two or three catheter specimens of urine sterile on culture and free from pus on microscopical examination.

Are we not rather prone to pronounce the patient cured when the temperature has quite become normal and the sister has reported an absence of pus by test tube examination?

Treatment of Acute Pyelitis.

The patient is confined to bed with a nurse in attendance. The room must be kept warm. The bowels should be moderately purged. A four-hourly chart is kept of temperature, pulse, respiration, daily quantity and reaction of urine and the presence of pus and blood. Mustard plasters, hot packs or "Antiphlogistine" is applied over the loins. Bland drinks such as milk, water, barley water, weak tea or coffee are given *ad libitum*, up to four, five or six litres per twenty-four hours. If there be much vomiting, as much fluid should be given by the rectum as can be retained and if the quantity be insufficient, this should be supplemented with subcutaneous injection of saline solution.

In most cases the urine is acid and most bacteria flourish best in an acid urine. It is thought also that their toxins set up a mild acidosis which interferes with the acquiring of an immunity.

The object in the acute stage is to render the urine alkaline as quickly as possible and to keep it alkaline till the temperature has been normal for several days. To this end large doses of citrate of potash (four grammes) are given every two hours till the urine is strongly alkaline. The interval should then be reduced to three hours and in a day or two to four hours. The dose may be given in a full glass of barley water and is better tolerated. If vomiting be severe, alkalies in the form of bicarbonate of soda should be given by the rectum or subcutaneously.

After the temperature has been normal for several days, the administration of alkalies should be stopped and the urine rendered acid again by acid sodium phosphate in doses of 1.2 grammes (twenty grains) every four hours. Hexamine should

then be given in doses of 0.6 gramme every four hours.

Hexamine, of course, has no action in an alkaline urine. Hexamine in solution is very unstable and it is best given in tablet or powder form. Also hexamine occasionally causes a profuse haematuria. It should be continued in doses of 0.3 gramme (five grains) three or four times a day for three or four months to lessen the risk of relapse or the risk of a chronic pyelitis.

When all signs and symptoms of the disease have been completely absent for a week or more, the hexamine may be discontinued for a few days and a catheter specimen obtained for culture. It is not safe to rely on a sterile culture from the urine of a patient taking hexamine.

No instruments should be passed into the bladder during the acute stage except once in a female to obtain a specimen for culture if the diagnosis be obscure. Never give bladder irrigations to a patient with acute pyelitis and renal lavage should never be employed in acute cases.

Fulminating cases occasionally respond rapidly to this treatment, but if no relief be obtained in twenty-four to forty-eight hours, an immediate nephrectomy or nephotomy is the only hope of saving life. The results of nephrectomy are much better according to the figures of most workers than those of nephotomy. Also a nephrotomy frequently requires a secondary nephrectomy and the mortality of this secondary operation is 50% according to Keen.

Chronic Pyelitis.

Whereas the majority of cases of chronic pyelitis are the end results of a former acute attack and are often the results of stopping treatment directly after the subsidence of acute symptoms instead of continuing with hexamine for a long period, yet many patients give no history of an acute attack or the history may be obscure.

In women (the vast majority of chronic cases occur in women) the history will frequently be dated back to a pregnancy. The patient will tell us that there was stangury during the last three or four months of pregnancy, that her doctor examined her urine (probably only for albumin and sugar) and told her that her symptoms were due to pressure of the uterus on the bladder. Now, of course, this mechanical cause of frequency of micturition operates in the majority of pregnancies, but during the first three months, not often during the last three months or rather it does not often commence during the last three months. Frequency coming on during the last three months should be regarded as indicative of a pyelitis until an exhaustive examination of the patient and of her urine has failed to reveal sign of the disease.

Pyelitis of pregnancy is very common, usually mild, often unrecognized and a fruitful source of a subsequent chronic infection.

The diagnosis of chronic pyelitis depends on deep renal tenderness and frequency of micturition. These two conditions should always lead to a micro-

scopical examination for blood and pus and to a culture for organisms from a catheter specimen.

Some cases may be so mild and of such long standing that there is little or no inflammatory reaction on the part of the kidney and therefore no pus cells are found in the urine even on repeated examinations of centrifuged specimens.

In these cases the invading organism is as it were hibernating and merely keeping the breed alive in the hope that some day its host will commit some indiscretion in the matter of exposure, diet or neglect of bowel action.

In the meantime the organisms are multiplying but slowly. The urine, therefore, may contain only odd specimens and it may be necessary to centrifuge before plating out. Even then it may be necessary to examine several specimens before obtaining a culture.

The following history illustrates this:

Miss C., *atatis* seventeen years, had acute urinary symptoms for the previous three winters. She complained of pain in both kidney regions, fever and stangury which kept her in bed for two or three months each time. When seen she was tender over both kidneys, had constant backache and was unable to work. The urine contained no albumin, no pus and no blood cells. Three specimens were sterile, but the fourth yielded *Bacillus coli communis* on culture. She was given renal lavage five times to both kidneys. Tenderness has never been found since, several specimens of urine have been sterile, there has been no further acute attack during the past two years and she has been in constant employment till her marriage four months ago.

Treatment of Chronic Pyelitis.

The treatment of patients suffering from chronic pyelitis depends on the length of history. When an acute attack has subsided and become chronic, it is perhaps worth while if time and money are of no object to the patient, to persevere for three months with hexamine or sodium benzoate, complete rest and copious drinking.

Autogenous vaccines are usually very disappointing, good results occur, but only in a small percentage and it is doubtful whether all these "cures" are confirmed by repeated culture examinations.

All patients who fail to respond within three months, and all who come under observation suffering from a chronic condition, should be treated by renal lavage with solutions of colloidal silver. For in this we have at last a rapid, safe and practically certain cure for a condition which formerly was regarded as practically incurable in all but a depressingly small percentage.

I cannot speak too enthusiastically about renal lavage. Every surgeon who has tried it persistently and efficiently, has reported the same—almost universal success. It is probably no exaggeration to say that renal lavage is one of the greatest advances in kidney surgery during the last ten years. Kidd, who is the originator of the method, in 1920 reported on his first forty-five cases. All had been treated for several years by other methods which had failed. Yet working at a new method on these hopeless cases his results were as follows: Cases proved cured by culture 80%, cases clinically cured but not proved by culture 15.5%, failures two cases or

4.5%. One patient suffered from an old gonococcal infection and one was a nurse who remained on duty during treatment.

Kidd has improved his technique and it is to be presumed has improved even upon his initial 95.5% of cures of patients suffering from a condition which medical treatment had completely failed to cure.

The Technique of Renal Lavage.

In carrying out renal lavage the patient who should have an empty rectum, is placed in a slightly modified lithotomy position with the buttocks about twenty-one centimetres from the end of the table. The bladder is thoroughly irrigated with lotion, either boric acid or mercury oxy-cyanide in a strength of one in four thousand and is left filled with two hundred and forty to three hundred cubic centimetre of the lotion. A general anaesthetic should never be given. An expert will rarely use even a local anaesthetic, but a beginner will find that an installation of a 10% solution of cocaine with adrenalin is a great comfort to the patient and himself. The cystoscope is then passed and the beak turned down. The instrument is then withdrawn till the field is obscured by the walls of the urethra. It is then pushed back into the bladder for a distance of 2.5 centimetres, rotated through about 40° to the right or left and the orifice of the ureter will usually be seen at once. The catheter is introduced till it will go no further. The patient usually can feel a slight pain in the kidney when the catheter enters the pelvis. The cystoscope is then withdrawn and the catheter left *in situ*. The patient's legs are lowered to the table.

Using a ten-centimetres "Record" syringe, a solution of colloidal silver is then injected very gently. Kidd uses a 5% solution for the first injection and a 20% solution for subsequent injections. The patient is told to speak immediately she feels a slight dull pain in the kidney. This indicates that the pelvis is full and by reading the syringe the capacity of the pelvis can be ascertained. The normal capacity varies from four to six cubic centimetres. Anything much above this indicates a hydronephrosis. A large hydronephrosis may hold up to forty cubic centimetres or more.

The pain indicates the danger point beyond which further injections may cause serious injury to the kidney. Hence the importance of working without a general anaesthetic. The capacity at all subsequent irrigations will be found to be the same to within 0.5 cubic centimetre. With the withdrawal of the catheter the operation is complete. Having found the pelvic capacity a note is made of it and at subsequent treatments one cubic centimetre less is injected.

Injections are repeated at intervals of a week if strong solutions are used, or every three to four days if 5% solutions are used.

Kidd using 5% and then 20% solutions got sterile urine after three treatments in all but four instances. Of these one patient had four injections and one had six. The two uncured patients had seven and eight.

From my own patients sterile specimens have always been obtained after four injections, but I always give six to be on the safe side. I am working with nothing stronger than 5% solutions.

Unpleasant Results.

Sometimes the patient has a few hours of mild pain in the kidney, but nothing more. Twice I have seen a slight rigor which was almost certainly due to injecting with too much force.

By the time the urine collected by the ureteral catheter has become sterile, the kidney pain has usually subsided and the frequency of micturition has disappeared. The latter symptom, however, occasionally persists owing to a trigonitis which will often be healed with a short course of bladder lavage or after the injection of a few dops of a 1% silver nitrate solution into the empty bladder once a week for a few weeks.

Results of Treatment.

My own patients numbered only twelve. The ages varied from seventeen to seventy-three. The shortest history was fourteen weeks following on an acute attack. All others gave a history of over three years' duration. The longest history was fifteen years. All had been given persistent medical treatment prior to renal lavage. In every instance the offending organism was isolated. Every patient was proved to have a sterile urine after treatment. Nine patients had no urinary signs or symptoms whatever after the sixth lavage. One still has pain in the right kidney region, the urine is sterile and no stone can be discovered by radiography. One patient had frequency of micturition which cleared up with bladder instillations and the twelfth patient still has intense burning pain during micturition, but no frequency, no renal pain or tenderness and the urine is sterile. Examination with the urethroscope reveals that in the middle of the urethra about 1.75 centimetre of its wall is red, spongy, bleeds easily and in appearance is very like a caruncle. The bladder is normal in appearance. This patient, the only one with severe residual symptoms, gave a history of illness for seven years with four years' regular treatment. For three years prior to lavage she seldom left her bedroom. She had constant intense renal pain and tenderness on both sides, especially the right, and intense strangury. She spent the greater part of every night sitting on a commode, passing urine drop by drop. Now, twelve months after treatment, her only trouble is painful micturition which I hope will clear up now that a local cause in the urethra has been found. She can help with the house work, spend a day in town and has improved enormously in general condition.

As regards the way in which renal lavage acts in clearing up deep-seated nests of organisms, Kidd has proved conclusively that the colloidal silver penetrates the entire kidney substance, bathing every cell and even penetrating the capsule and passing into the peri-nephric fat. It is, therefore, not a mere mechanical sluicing of a dirty drain, but is a real poisoning of every organism present in any portion of the kidney.

CONCLUSIONS.

(1) Acute pyelitis responds very well to intensive alkaline treatment and complete rest.

(2) The acute condition in a considerable number of patients passes on to the chronic stage.

(3) For chronic cases renal lavage offers an almost certain cure, no matter how long the history, in four or five treatments.

(4) No other method will cure more than a very small percentage of chronic cases.

LOW SPINAL ANALGESIA IN GENITO-URINARY SURGERY: WITH A NEW METHOD OF COMBINED ANALGESIA FOR SUPRAPUBLIC OPERATIONS.

By R. J. SILVERTON, M.B., Ch.M. (Sydney),
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LOW SPINAL ANALGESIA.

Two years ago in a paper on spinal analgesia I described a simple method by which the action of an analgesic agent introduced into the spinal theca could be limited to the sacral nerve roots (*THE MEDICAL JOURNAL OF AUSTRALIA*, June 11 and 18, 1921). By this means is produced what is practically a regional anaesthesia limited to the pelvic peritoneum, pelvic viscera and all the tissues of the perineum. The difficulty of making a complete urological study through the cystoscope in advanced cases of reno-vesical tuberculosis led me to the development of a method which may be called low spinal analgesia.

It is impossible completely to abolish the bladder reflex under general anaesthesia; with a spinal anaesthetic it always disappears and absolute stillness of the bladder with consequent absence of bleeding is obtained. A spinal anaesthetic as usually given, however, inhibits renal secretion for some hours by causing a fall in general blood pressure. This prevents collection of urine through ureteric catheters and deprives the surgeon of the opportunity of making the all-important bacteriological and functional studies.

I found that, by the simple expedient of reducing the dose of "Stovaine" to two centigrammes, making the injection with the patient in the sitting position and keeping him in that position for five minutes, the analgesia could always be limited to the parts supplied by the sacral nerves, so that no motor or sensory paralysis of the lower limbs or abdominal wall could be observed.

In genito-urinary work the method is susceptible of wide application. Its particular value is that while it yields perfect anaesthesia of the area for operation, no general effects at all are observed. During the operation the patient is quite comfortable and is free from the faintness and collapse not infrequently associated with the usual form of spinal analgesia.

I only employ low spinal analgesia when local conditions or a poor general state of the patient's health calls for it. Were it not for the fact that headache follows in a small percentage of cases and that the patient is deprived of the benefit of unconsciousness during the operation, it would be ideal for all operations in the anaesthetized area.

Results Obtained by Low Spinal Analgesia.

So far, I have used low spinal analgesia in forty-six patients who are grouped as follows:

Cystoscopy.

Nine patients were submitted to cystoscopy under low spinal analgesia. The majority of these were suffering from urinary tuberculosis. A striking instance was the case of a youth, aged twenty-four, who was suffering from advanced reno-vesical tuberculosis. I found cystoscopy impossible under general anaesthesia on account of bladder irritability and bleeding. The bladder would not hold more than thirty cubic centimetres (one ounce). Under a low spinal anaesthesia the bladder held one hundred and twenty cubic centimetres (four ounces) and bleeding was absent. The fluid could be seen to fall in the reservoir and then stop sharply when the bladder became filled to the utmost limit of its extensibility. Yet even with this powerful stimulus the bladder wall did not contract to expel the fluid. A diagnosis of bilateral renal tuberculosis was made. The functional tests were quite satisfactorily carried out.

Litholapaxy.

Litholapaxy was carried out in eleven patients with this method. The perfectly still bladder helps the manoeuvres of this operation considerably. In one case the patient was very old (eighty-two years) and had a moderate enlargement of the prostate as well as several stones in the bladder. He refused prostatectomy. As the heart was diseased and bronchitis was present, I performed litholapaxy under a low spinal anaesthesia. The operation was difficult and long on account of the prostatic enlargement, but nothing was felt by the patient. A year later he was quite well and the cystoscope revealed a healthy bladder except for the prostatic enlargement.

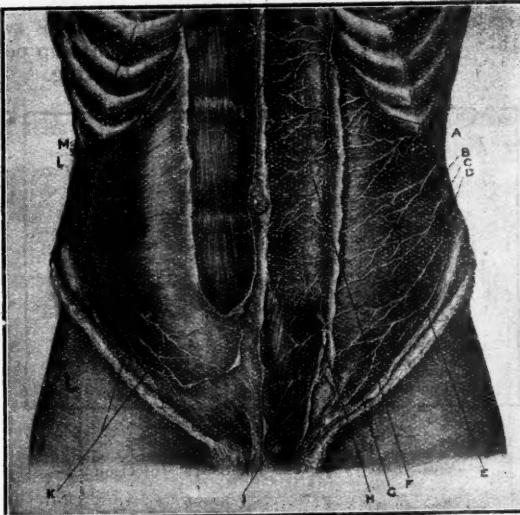


FIGURE I.
Lower Intercostal and First Lumbar Nerves, showing Muscle Planes (after Deaver).
The crosses indicate the skin wheals; the dotted line shows the track along which the deep injections are made.

- a = Lower intercostal nerve.
- b = Transversalis muscle.
- c = Last thoracic nerve.
- d = Ilio-hypogastric nerve.
- e = Ilio-inguinal nerve.
- f = Sheath of rectus abdominis muscle.
- g = Spermatic cord.
- h = Deep epigastric artery.
- i = Pyramidalis muscle.
- k = Ilio-inguinal nerve.
- l = Ilio-hypogastric nerve.
- m = Internal oblique muscle.

fulguration of the median vesical bar.

Resection of Perineal Fistulae.

Six patients were subjects of resection of perineal fistulae to test the analgesia. The result was perfect.

Insertion of Radium.

Perineal insertion of radium for malignant disease of the prostate was carried out in six patients.

Internal Urethrotomy.

Eight patients were subjected to internal urethrotomy. In none of these was the method urgently called for, but the patients were good subjects for testing the analgesia.

Pyelography.

In two patients pyelography was carried out. Pyelography must be performed without a general anaesthetic. Occasionally in male patients when cystoscopy under a local anaesthetic cannot be borne, low spinal analgesia meets all the requirements, for the sensitiveness of the renal pelvis to the filling medium remains as the necessary guide to the surgeon.

Fulguration of Papillomata of the Bladder.

In fulguration of large or multiple growths the use of a general anaesthetic is advisable for the first sitting to facilitate reduction of the growths to a more manageable size or number. Low spinal analgesia secures tolerance of the bladder wall for a longer period and its use is further indicated in older or weak patients. In an old woman of seventy-two years with heart disease and more than twenty papillomata I was able at the first sitting to spend over an hour in carefully burning over the surface of all the growths. Three weeks later all the growths except two tiny buds had disappeared.

Low spinal analgesia will bring more of these distressing cases within the reach of successful cystoscopic destruction and so enable the surgeon to avoid operation with its notoriously disappointing results, particularly where numerous growths are present.

Fulguration for Median Vesical Bar.

This form of analgesia was used on account of the poor general health of two patients prior to

I follow Dominici's method of simply opening up the space to each side of the *recto-urethralis* muscle with the forefingers to reach the posterior surface of each lateral lobe. The prostate is depressed with a sound or a long tractor passed along the whole urethra into the bladder. The needles are then embedded blindly aided by the touch. "Stovaine" confers great mobility on the pelvic floor and considerably helps adequate depression of the gland.

COMBINED LOW SPINAL ANALGESIA FOR SUPRAPUBIC OPERATION.

Combined low spinal analgesia is a method which I have devised and employed only this year. It is a combination of the low spinal analgesia with blocking of the nerves of the lower portion of the abdominal wall. The former anaesthetizes the pelvic viscera, while the latter allows of painless approach to these viscera through the mid-line below the umbilicus. The object of the method is to allow bladder operations, particularly suprapubic prostatectomy, to be performed without a general anaesthetic and without the alarming fall in blood pressure which often accompanies the usual spinal analgesia.

The surgeon desires to avoid a general anaesthetic when the heart is diseased or when chest complications are feared. In severe kidney deficiency it is often wise to obviate the use of a circulating anaesthetic. In bronchitic or asthmatic patients, provided the blood pressure is not low, there is no objection to the usual spinal method. In patients with arteriosclerosis and high blood pressure the fall in pressure produced by the ordinary spinal method is actually an advantage. But when the heart muscle is weak and the blood pressure already low, it is very undesirable to cause a further drop of from forty to sixty millimetres. In the latter group and in all patients whose general condition is very poor or in whom urinary sepsis and renal deficiency are well developed, the method I am about to describe constitutes the ideal anaesthesia.

Technique.

Low spinal analgesia is first produced. The technique described above is followed: Two centigrammes of the 5% "Stovaine" solution are injected. After five minutes in the sitting position, the patient is laid flat and the towels arranged around the operation area.

The eleventh thoracic, twelfth thoracic, ilio-hypogastric and ilio-inguinal nerves are now blocked with 2% "Novocain" solution in the lateral part of the anterior abdominal wall on each side. The "Novocain" solution is made up with half-normal

saline solution. Sixty cubic centimetres are sufficient. A tablet of adrenalin, corresponding to 0.3 cubic centimetre of the 1 in 1,000 solution, is added. The needle point has to reach the plane between the internal oblique and transversus muscles and will need to vary in length with the obesity of the patient (3.5 to 8 centimetres). The total thickness of the needle should remain moderately fine (0.6 or 0.7 millimetre). The injections are made through the three points on the skin shown in Figure I. At these points a small intra-dermic wheal is first made with a fine hypodermic needle. Through these wheals the deep injections are painlessly made.

The point of the large needle first seeks the resistance offered by the aponeurosis of the external oblique muscle. Piercing this, it sinks through half to one centimetre of soft muscular substance to reach the plane between the internal oblique and the transversus. Occasionally a twinge felt by the patient indicates the touching of a nerve trunk. This gives the exact level, but even without such help the injection of two or three cubic centimetres of fluid at each deep point touched assures adequate perineural bathing.

The lowest injection point is made two fingers' breadth medial to the anterior superior iliac spine and only one centimetre above the line of the inguinal ligament. The needle follows a direction at right angles to the surface. The other two injection points are on a line running upwards and a little inwards from the lowest point. The upper point lies two fingers' breadth below the level of the umbilicus. The injections made all along this

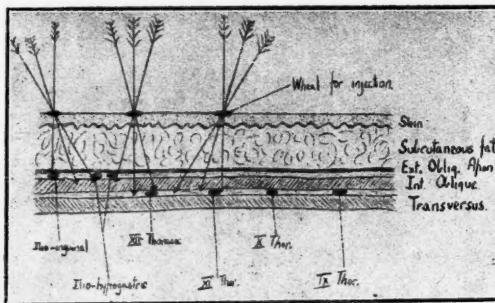


FIGURE II.
Diagrammatic Vertical Section of Lower Abdominal Wall, illustrating the Perineural Injection.

line avoid the inferior epigastric and deep circumflex iliac arteries and the large ascending branch of the latter. The arteries which run around the trunk in company with the nerves, are small and need not be feared. Between successive injections the needle is almost, but not entirely, withdrawn from the skin at the injection point and then pushed down to the nerve plane in such a direction that successively higher areas in that plane are bathed (see Figure II.).

None of the more superficial planes need injection, for the blocking of the nerve trunks paralyses the recti and also anaesthetizes these muscles and the whole of the skin over them. The motor paralysis of the recti is usually only partial, but is enough to allow easy retraction even with a nervous patient.

Tearing of the transversalis fascia and rolling up of the peritoneum are painless. The bladder wall, bladder base and prostate will be found to have been desensitized by the low spinal injection. The anus

is soft and patulous and the prostate so mobile that it can be pushed up to within easy reach of the enucleating finger in the stoutest patient.

Results Obtained by Combined Method.

So far I have employed this method in thirteen cases of suprapubic prostatectomy. In two of these instances the method rendered operation possible in patients for whom prostatectomy under a general or the usual spinal anaesthetic would assuredly have been fatal.

One patient, a thin old man of seventy-five years with heart disease, in the hands of another surgeon for suprapubic prostatectomy, collapsed under ether before the incision was made. After successful but

arduous artificial respiration he was returned to bed. A week later I undertook the task of performing the operation under combined low spinal analgesia. The prostatectomy was perfectly borne.

Operation in the other patient was even more risky on account of his cardiac condition. He was an anaemic and extremely feeble man of seventy years with rather advance heart disease and an enlarged prostate. Urinary sepsis and moderate renal deficiency were present. I removed the prostate painlessly under combined low spinal analgesia. The convalescence was perfect. A senior general surgeon who was present at this operation, remarked that the intervention would probably have been fatal under any other form of anaesthesia.

In two other cases the method was employed on account of advanced age (seventy-five and seventy-six respectively) and poor general condition. Both patients did very well.

In the remaining nine patients the conditions were better and in them the method was really being tried.

It is no exaggeration to say that after prostatectomy under combined low spinal analgesia the patient's general condition is practically the same as if no operation at all had been performed.

Finally, I must not omit the case of a man, aged fifty-eight years, suffering from a large diverticulum of the bladder. The general condition was poor and urinary sepsis advanced. I operated under combined low spinal analgesia. The diverticulum was

very adherent and an extensive dissection in the pelvis was necessary. No pain was felt during the operation. A complete cure was obtained.

OPERATION FOR UTERINE PROLAPSE.¹

By F. A. GILL, M.B. (Melbourne),
Honorary Surgeon to Out-Patients, Perth Hospital,
Honorary Surgeon to Out-Patients,
Children's Hospital,
Perth.

A SHORT SURVEY of the literature reveals no less than thirty-five operations which in varying combinations are employed today in the treatment of *prolapsus uteri*; it is, therefore, with some hesitation that I venture to add to this number.

While the majority of cases of prolapse present few difficulties, there is a small group which gives endless trouble and accounts for the multiplicity of operations which have been devised.

The patients comprising this group are mostly multiparæ, at or past the menopause, with lax abdominal wall, lax and torn pelvic floor, no perineum, marked rectocele and vesicocele and long history.

It was to deal with these cases that operations for implanting the uterus in the abdominal wall were devised by Harris, Kocher and Murphy.

Harris brought the uterus out of the abdominal wound, closed the peritoneum round the body of the uterus, laid the *corpus uteri* back on the closed peritoneum, sutured the uterus to the

rectus muscle and closed the rectus sheath over the top of the uterus, thus leaving the uterus lying between the peritoneum and rectus sheath.

Kocher closed the peritoneum and rectus sheath round the body and left the corpus external to the sheath covered only by skin and faecia.

Murphy divided the tube, round and broad ligaments close to the cornu, bisected the corpus in the sagittal plane, excised the whole of the mucosa down

¹ Read at a meeting of the Western Australian Branch of the British Medical Association on October 17, 1923.



FIGURE I.

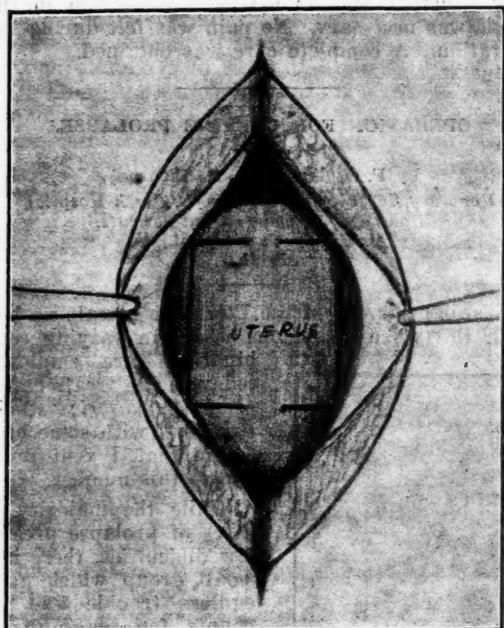


FIGURE II.

to the deepest glands, sutured the peritoneum and sheath round the body, turned the two halves of the uterus outwards and sutured them to the external surface of the aponeurosis.

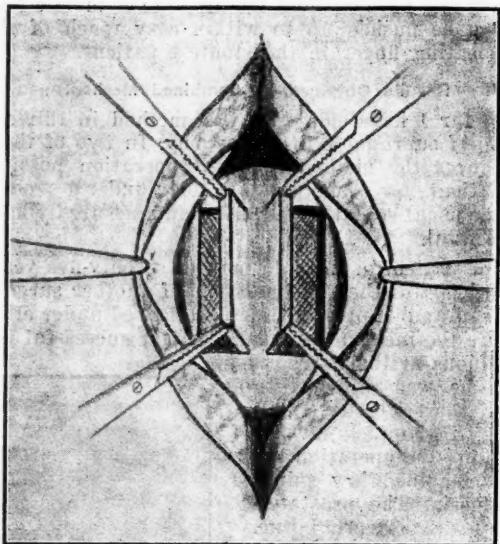


FIGURE III.

All of these operations, especially Murphy's, give a good, firm lasting result in suitable cases.

There is, however, one grave disadvantage common to all three, namely that they are only feasible when the uterus is moderately small; and it is the

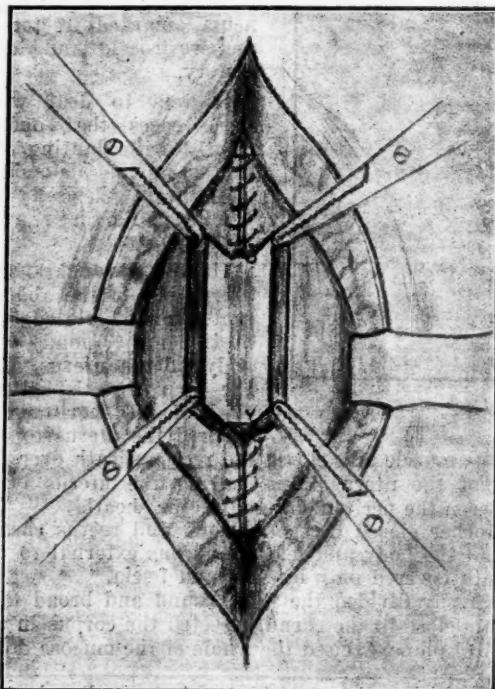


FIGURE IV.

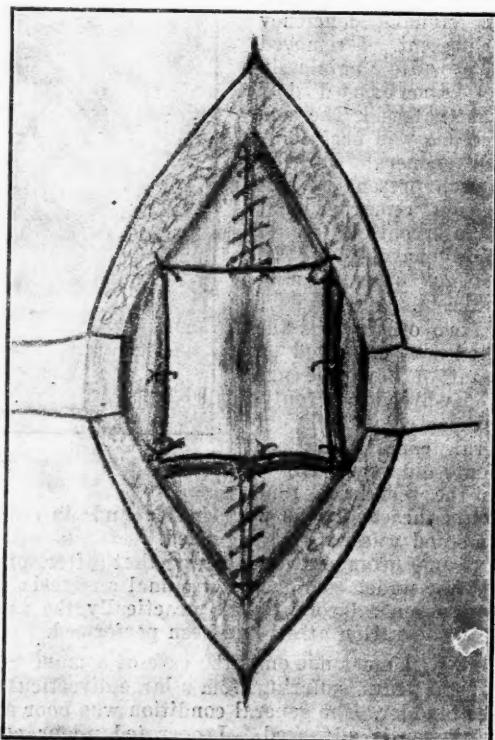


FIGURE V.

large, heavy uteri which account for most of the post-operative failures.

When there was only a moderate enlargement Murphy cut away portion of the corpus to reduce the bulk of the subcutaneous tumour; but to Murphy's operation there are two other serious objections especially with heavy sub-involved uteri.

In the first place the operation involves the free opening up of an infected cavity, the remains of which are left in contact with subcutaneous fat with consequently great risk of infection of the wound.

Secondly, there is the difficulty of completely removing all trace of endometrium and the risk of leaving portion of a secreting membrane in a subcutaneous pocket without a chance of drainage for the secretion.

Description of the Operation.

It is claimed for the operation now to be described that it is suitable for use in all forms of extreme prolapse in women past the child-bearing period, provided that the uterus be healthy enough to be preserved and irrespective of the size of the uterus.

In the first stage the abdomen is opened in the middle line. The uterus is drawn out, the tubes and ovarian vessels are clamped, divided and tied. The broad ligaments are opened up by blunt dissection and the uterine arteries are picked up and ligated.

In the second stage the uterus is replaced in the abdomen with the anterior surface exposed. From this surface two flaps 4.25 centimetres long and 2.5 centimetres wide and 0.6 centimetre thick are raised. The attachment along their mesial borders is retained. The uterine cavity is not opened.

In the third stage the peritoneum and aponeurosis are closed by continuous catgut sutures, the flaps are left protruding. The last stitch of each suture includes the base of the uterine flaps.

In the fourth stage the uterine flaps are laid flat on the aponeurosis and sutured to it by divided sutures of chromacized catgut.

In spite of tying both ovarian and uterine arteries the flaps remain well nourished, yet there is no troublesome haemorrhage from the beds from which they are raised.

As with every other operation for prolapse, a thorough repair of the pelvic floor is, of course, essential. Also diseased conditions of the cervix, such as erosion, laceration, hypertrophy *et cetera* should receive appropriate treatment.

Reports of Cases.

APPENDICITIS: UNUSUAL EARLY SYMPTOMS.

By ST. JOHN W. DANSEY, M.B., Ch.M.
Honorary Surgeon, Royal Prince Alfred Hospital,
Sydney.

APPENDICITIS in its early stages has divers ways in manifesting itself, yet the following must surely be one of great rarity.

Q.B., *etatis* twenty years, a well-nourished healthy lad, was suddenly taken ill while on a holiday at Wollongong with pain over the bladder and in the right groin and

frequency of micturition with scalding. Dr. Kerr, of Wollongong, found definite tenderness along the right spermatic cord with a temperature of 37.8° C. (100° F.). On the next day there was swelling of the right testicle with unusual moisture at the urethral meatus, a watery-looking discharge. The temperature was 39.4° C. (103° F.). The possibility of venereal infection was denied. On the following day the patient was suffering from all the symptoms of acute epididymitis of the right testicle.

Examination of the urethral discharge revealed only the presence of abundant bacilli of the *Bacillus coli communis* type. The pelvis and abdomen were normal throughout the five days of acute illness, while the temperature varied between 38.3° C. and 39.4° C.. The condition gradually cleared up and he returned convalescent to his home, where I saw him in consultation. After a thorough abdominal and rectal examination nothing could be found except a subsiding epididymitis of the right side. There were now no bladder symptoms and no urethral discharge. He was sent for a month to the country. While he was away his general condition did not improve; he felt tired and continued to lose weight, but had no pain. Suddenly, after three weeks his left testicle began to swell and became painful. Dr. Donald, of Strathfield, found the patient on his return home suffering from acute epididymitis of the left side with pyrexia. There was no disturbance of micturition and no urethral discharge. The abdomen was apparently normal. This condition continued for seven days when the patient complained of pain in the lower part of the abdomen. When I saw the patient he looked acutely ill; his temperature was 39.1° C. (102.5° F.) and his pulse rate 120. There was deep tenderness in the suprapubic region especially on the right side. A definite tender mass was felt *per rectum* continuous with the prostate gland above rising to the right in the pelvis. There was a resolving epididymitis on the left side. The abdomen was immediately opened in the middle line and the pelvis found filled with coils of intestines gummed together with lymph. The caecum was free and also the proximal end of the appendix. This was followed down to the pelvis and a small abscess cavity was opened at the bottom of Douglas's pouch. The tip of the appendix was adherent to the base of the bladder and was the lowest situated appendix I have yet encountered. On its removal the appendix was found to be phlegmonous in its distal half with a perforation at its tip.

The patient made an uninterrupted recovery and is now quite well, many pounds heavier in weight than ever before.

Comments.

There can be no doubt that the appendix was the causal agent of the attacks of epididymitis. The course of events were, I take it, a direct invasion of the *vesicula seminales* by the virulent *Bacillus coli communis* from the tip of the appendix. This at first caused an acute posterior urethritis, later travelled by the *vas* to the epididymis on the right side. This subsided in due course, but the cause not being removed, the activity of the organisms started again, this time along the left *vas* producing the left epididymitis. The infective condition at the distal half of the appendix now progressed involving the destruction of the appendiceal wall and a localized abscess formed. Then and not till then were there any definite signs pointing to the appendix being diseased, though the possibility of this was early recognized.

A lesson of no small importance can be drawn from this case. It shows how necessary a thorough and careful examination of everything possible is, even when a diagnosis appears obvious. How many of us might in the case of a vigorous youth with sudden development of urethral infection and bladder irritability with acute epididymitis regard the condition as a straight out case of gonorrhœa, even with the denial of any possibility of venereal origin? The early bacteriological examination by Dr. Kerr of the urethral discharge made the cause of the earlier attacks of epididymitis clear when the appendix was later revealed to be diseased.

Reviews.

APPLIED PHYSICS.

REPRESENTING as it does the ideas derived from the extensive practical application of electro-physics to a large number of patients in the United States Army hospitals, "Physiotherapy Technic" by Dr. C. M. Sampson is one of the most stimulating works on electrology and kindred subjects since the appearance of Cumberbatch's "Diathermy."

The technique prescriptions contained in it are of a very satisfactory type as they allow for the differences which exist between various machines. It is rather difficult, however, to appreciate one item which occurs in most of them and is described as "the ionizing dose of X-ray" (five milliampère minutes, five inch gap, one millimetre aluminium and eight inches distance). There is no proof offered of the statement that this dose ionizes any more than any other dose and the phrase is rather suggestive of empiricism.

The inclusion in the work of the author's Leonard Prize paper on "Ultra-Violet Light and X-Ray as Physiological Complements" gives an additional value to it, but sufficient stress is not laid on the increased danger of deep therapy burns as a result of increasing the resistance of the superficial tissues without at the same time altering that of the deeper structures. The small degree of penetration of the ultra-violet radiation is a source of great danger if the combination is used in deep therapy and cross-firing will be much more likely to produce sloughing of the deeper tissues while leaving the skin intact than at present. For while the skin offers some difficulties to the radiologist, it also acts as a safeguard as it is the only tissue on which the effects of radiation can be easily tested. The chief value of the combined treatment would be in forestalling the evil effects of the administration of an excessive dose of X-rays if the fact were recognized immediately, or of treating them if not recognized until ulceration occurs.

Diathermy, both medical and surgical, is fully discussed and duly accredited by the author. If his optimism appears overpowering at times, it is perhaps as well that it is so as many practising physicians and surgeons, knowing nothing of the modern science, condemn it out of hand because it is "electrical" and adhere in preference to massage and conductive heat neither of which are either as economical or as efficient as the despised converusive heat. The latter are discussed by the author in due course.

Throughout the book the reader is struck by the correctness with which the emphasis is laid in the right place and in the discussion on diathermy alone this is very evident. Auto-condensation, once so very popular, is dismissed in a few lines and the vacuum electrodes (the violet ray apparatus so beloved by tonsorial experts) as a means of indirect diathermy are also treated with scant courtesy, but the non-vacuum electrodes and the technique of direct diathermy are treated with all the detail necessary to enable the author's work to be repeated.

The limitations of galvanism and faradism are now well known and the directions and indications for using these modalities are clear and precise.

It is decidedly refreshing to read a book on electro-physics without being compelled to wade through an ocean of useless matter dealing with antiquated apparatus and with manufacturers' claims. Each electro-therapist prefers to choose his own instruments and the basic principles as laid down by Dr. Simpson are all the guide that he needs.

The field of physio-therapy is now becoming so extensive that the expense of the necessary equipment can only be borne by the specialist whose large number of patients justify him in making the necessary outlay.

¹ "Physiotherapy Technic: A Manual of Applied Physics," by C. M. Sampson, M.D.; 1923. C. V. Mosby Company; Demy 8vo., pp. 444, with 85 illustrations. Price: \$6.50.

THE ELEMENTS OF SCIENTIFIC PSYCHOLOGY.

"THE ELEMENTS OF SCIENTIFIC PSYCHOLOGY" by Knight Dunlap, the Professor of Experimental Psychology in the Johns Hopkins University, is well worthy of the close consideration of every serious student of psychology.¹

Psychology within the last fifteen years has taken on a new lease of life. Not only has the study of the human mind become the battle ground of warring opinions and theories, but its application is almost daily extending into problems of education of industrial activities and social difficulties. The armchair introspection of the philosophers with debates concerning terms whose definition varies with every school of thought, are by their keenness and devotion to hair-splitting reminiscent of the medieval theologian. In real life Knight Dunlap insists that we must rely on the scientific method and deal with real defects and real activities. His book is remarkable for sanity of expression, clearness of thought and truly scientific spirit. After a sound analysis of the present position of psychology, he deals very thoroughly with sense perception data and measurements, the bodily mechanism, thought content, consciousness, instinct and habit *et cetera* together.

There is a brief but admirable appendix on mental deficiency and mental disease. As a guide to the present state of knowledge of general psychology and as an indication in regard to the safe lines for future progress, it is invaluable not only to the elementary student for whom it is primarily intended, but also to the advanced student and practitioner.

DERMATOLOGY.

IN the fourth edition of "Diseases of the Skin" by Dr. R. L. Sutton, alterations and important additions have been made.² In order to economize space some of the more accessible literature has been eliminated, while some foreign contributions which are inaccessible to the average reader, has been more freely abstracted. The different subjects are treated in an exhaustive way and many illustrations have been added aggregating with the coloured plates nearly a thousand illustrations in a book of about eleven hundred pages. This is a prominent feature in a work which combines sound clinical description with careful pathological observations. It is a work which must be helpful both to the student and the practitioner of medicine.

VITAL FACTORS OF FOODS: VITAMINS AND NUTRITION.

THE work by Dr. Carleton Ellis and Annie Louise Macleod constitutes a quarry of information rather than a concise text-book of the subject.³ The literature of vitamin investigation is laboriously traversed and short summaries are given of the results of research. This has been conscientiously done, but of proper editing there is no trace. There is no attempt at adjudication between conflicting views and the distribution of emphasis in the form of allotted space is uncritical. The book gives the impression that the authors are technical chemists who are not at home in animal experimentation or in medical science generally. Nevertheless the book has a value for reference purposes and as a guide to the literature of the subject.

¹ "The Elements of Scientific Psychology," by Knight Dunlap, Professor of Experimental Psychology in The Johns Hopkins University; 1922. St. Louis: C. V. Mosby Company; Crown 4to., pp. 368, with 31 illustrations. Price: \$8.50 net.

² "Diseases of the Skin," by Richard L. Sutton, M.D.; Fourth Edition, Revised and Enlarged; 1921. St. Louis, U.S.A.: C. V. Mosby Company; Royal 8vo., pp. 1,132, with 969 illustrations and eleven coloured plates. Price: \$9.50.

³ "Vital Factors of Foods: Vitamins and Nutrition," by Carleton Ellis, S.E., F.C.S., and Annie Louise Macleod, Ph.D.; 1923. London: Chapman and Hall, Limited; Sydney: Angus and Robertson, Limited; Royal 8vo., pp. xvii. + 391, with twenty-two illustrations. Price: 30s. net.

The Medical Journal of Australia

SATURDAY, JANUARY 12, 1924.

A Retrospect.

Medicine.

THE collation and evaluation of the original work published within the past twelve months is a colossal task. The mass of literature is so great that few would attempt to read it all and none would succeed, if the attempt were made. There is a tendency among some authors to exaggerate the length of their articles, to overload them with details and to place a tax on the attention and patience of the reader. New journals are springing up, especially in the United States of America, although the justification for some may not be apparent. In these circumstances the survey that follows is offered not as a review of the whole literature of the world, but merely as a selection from the material available to the medical profession in Australia. In past years it has been pointed out that the retrospect articles should be regarded as interim reports, subject to correction or revision as fresh work is completed and further facts are brought to light. Each year the same problems in medicine are attacked both from the same and from new points of view and only occasionally revolutionary doctrines are pressed into service and adopted by a substantial section of the medical profession. Progress may be insidious; the startling announcements are less likely to be well founded than are teachings that depend on data gradually collected one by one and recorded before their full significance can be ascertained.

Important advance has been made in connexion with the study of the aetiology of asthma and hay fever. Clarke and Mayer, extending the work of Chandler Walker and his co-workers, have discovered that silk should be added to the remarkable collection of substances which may give rise to asthma. These investigators and others have

added to the knowledge concerning the relationship between this disease and sensitization to foreign proteins. Ivan Maxwell has applied this work to Australian conditions and has set up a classification of the grasses and pollens concerned in the aetiology of asthma and hay fever in Australia. Rackemann has enunciated a hypothesis that in persons with hay fever the tissue cells contain specific antibodies which are absent from the cells of unaffected persons. He holds the view that hay fever is an allergic phenomenon and that the difference between allergy and immunity is determined by the predominance of antibodies in the cells or in the blood respectively.

Dreyer has raised hopes that better therapeutic results will be obtained in pulmonary tuberculosis from the use of his diaplyte vaccine as an antigen. His experimental evidence is insufficient to be conclusive. Treatment with this vaccine has not yet justified the hopes that a cure for tuberculosis has been discovered.

Confusion has arisen in the literature dealing with the diagnosis of pulmonary tuberculosis. There is a tendency in America to discredit the diagnosis of the disease in the absence of irrefutable pathological evidence, that is unless the tubercle bacillus can be found in the sputum. In England many clinicians insist on an early diagnosis before the appearance of physical signs and before the sputum contains tubercle bacilli. The difficulty would appear to be that if the latter attitude be adopted, cures will be registered when no actual clinical disease has been present, while if the former practice be followed, the lesions subjected to treatment will be so far advanced that no prospect of arrest can be offered. At the Australasian Medical Congress (British Medical Association) held in Melbourne reports were submitted to indicate the extent and the mortality of the disease in Australia. While the information gathered is in many respects incomplete, it is evident that the disease is very widespread in the Commonwealth and that the case mortality is very high. A surprisingly high incidence of infection, as revealed by a reaction to the von Pirquet test, has been discovered among the people of Australia, although the frequency of disease manifestations does not seem to be great. The mortality has been reduced or has become reduced

to fifty-three per hundred thousand of population. The extent of tuberculosis among cattle and the frequency of bovine infections in human beings are uncertain. Much of the evidence is contradictory and confused. In these circumstances the official view is that fuller information must be sought and that until many questions have been definitely answered, it will be hazardous to apply prophylactic measures on a large scale. Certain speakers expressed the view that the disease could be combated by more centralized control of the various agencies engaged in the treatment of persons suffering from tuberculosis. These include medical practitioners, nurses, the members of the staffs of hospitals, of dispensaries and of sanatoria, the responsible authorities of farm colonies and industrial medical officers. A plea was made in favour of the establishment of tuberculosis dispensaries in connexion with all the large public hospitals. Clive Rivière has suggested that nurses should visit patients in their homes to advise them while they await admission to hospitals or sanatoria.

The pathological and bio-physical processes of silicosis and its relationship to pulmonary tuberculosis has been elaborated in a lucid manner by W. Watkins-Pitchford.

In continuation of the work done in previous years on the treatment of pulmonary tuberculosis by artificial pneumothorax, investigations have been made concerning the mechanism of production of the pleural reflex. While finality has not been reached, there is strong evidence to show that this symptom complex is a result of injury to the visceral layer of the pleura. Stivelman has been especially concerned in propounding this view.

Diabetes has been prominently before the medical profession and the public, particularly on account of the treatment. Reference to this will be made under another heading. The valuable work of Banting, Macleod and others in amplifying the evidence that there is in this disease a deficiency of the substance elaborated by the islet cells of the pancreas, comes as an advance on the work of Allen on the signs of degeneration of these cells. These researches have brought us appreciably nearer an understanding of the pathology of diabetes. The aetiology of the primary damage to the pancreas

and the actual nature of the permanent lesion on which the diabetic process depends, still remain obscure. On the other hand the bio-chemical changes which accompany this form of disturbed metabolism and which are manifested by hyperglycaemia and glycosuria, are being revealed. A fuller appreciation of the significance of the increase of the ketone substance has brought clinicians into a position to study the disease more exactly. But until further light has been thrown on many still obscure details concerning the chemical changes in the blood and tissues of the diabetic, the doctrines concerning this disease must remain speculative.

Knud Faber has shown that the blood sugar threshold for glycosuria is a constant for each individual, that is for any given individual the same concentration of sugar in the blood is necessary before sugar appears in the urine. This threshold varies in different individuals. It follows from this that when the blood sugar threshold is high, glycosuria does not appear as readily as when it is low.

Edward Weiss has made an ingenious suggestion that there is a congenital factor which operates in the aetiology of chronic nephritis. He assumes that certain individuals are predisposed to nephritis by virtue of a renal anomaly of developmental origin. This factor would furnish an explanation of the onset of nephritis in young persons without apparent cause and of the known tendency of the disease to occur in several members of the same family.

The investigations by Newburgh and Polvogt, McCollum and Nina Simmonds seem to show that diets containing large proportions of protein may produce congestive lesions of the kidneys of laboratory animals and even degenerative lesions of the tubules.

Apperly has shown that in the majority of cases of so-called achlorhydria there is a normal secretion of gastric juice, but that the acidity is neutralized by regurgitation of the alkaline duodenal secretion.

Israel Brown insists that the modern prevalence of hyper-thyroidism is to be attributed to the emotional instability of our national and domestic life. This instability is reflected in the modern stage, the cinema and the divorce courts. The dis-

ease can only be prevented by a return to sanity in the moral and physical education of the young, by the promotion of domestic happiness and an effort to make the young satisfied with a healthy environment. He maintains that hyper-thyroidism is not a disease of the thyroid gland, but is a syndrome in which the whole chain of endocrine organs is involved.

Surgery.

Progress in surgery may take place either in the direction of the extension of knowledge of the pathology and pathogenesis of diseases treated by surgeons or by improvement in operative technique and the better application of anatomical and embryological knowledge to the requirements of surgical intervention. More attention is usually paid to the latter, although the former is the more important. During the year some sound work has been carried out in the direction of building up surgical treatment on a physiological foundation, by which is meant that as fresh bio-physical and bio-chemical information is discovered, the surgeons seek to find surgical procedures to mitigate the effects of disease involving a definite departure from normal bio-physical or bio-chemical processes. Royle has noted that the sympathetic system plays an important part in the maintenance of postural tonus. He has sought experimental evidence of this fact and has watched the effect of simple section of the sympathetic rami on goats. Having established this physiological fact, he has applied it to the surgical treatment of spastic paralysis. In this condition the disability is caused to a large extent by the inability of the subject to control his voluntary muscles on account of an excessive state of tonic contraction. He has obtained remarkable improvement in two patients who have suffered for many years from spastic paralysis.

Surgeons are utilizing the information obtainable from the estimation of the basal metabolic rate in exophthalmic goitre before proceeding to operative measures. At the Australasian Medical Congress (British Medical Association) in Melbourne Trumble recounted his own experience in using this estimation. In Europe much work has been conducted on this subject and the majority of physiologists now hold that the functional activity of the

thyroid gland can be measured with some degree of accuracy by controlling the basal metabolic rate. With this physiological guide, the best results have been obtained in exophthalmic goitre by partial thyroideectomy.

The surgery of the gall bladder continues to hold the attention of many workers. O'Day has made a valiant attempt to revive interest in favour of cholecystotomy, but the consensus of opinion has been voiced by James Sherren who claims that cholecystectomy should be performed in all cases, unless some very special reason exists for the selection of the more conservative procedure. Several articles have appeared in which the authors deal with the surgical anatomy of the biliary tract and especially the origin and relations of the bile ducts and of the cystic artery.

Little new light has been thrown upon the pathology of gastric and duodenal ulcer. Evidence is accumulating that the aetiology of both conditions is complex and that both local and general factors participate in their production. It has further been shown that the circumstances leading to necrosis are distinct from those which maintain it. In the surgical treatment of gastric ulcer gastro-enterostomy is now passing out of fashion; this operation is still being performed for duodenal ulcer. Often it is combined with excision of the ulcer-bearing area. Moynihan advocates partial gastrectomy for the former. In regard to the form of operation, the Mayos recommend the original operation of Billroth in favour of Pólya's operation or Balfour's modification of it.

A highly interesting chapter in surgery is that dealing with hydrocephalus. Formerly the pathology of this condition remained unheeded and unexplored and its treatment in consequence was haphazard and symptomatic. More recently closer study has been given to the physiology of the secretion and absorption of the cerebro-spinal fluid and to the nature of the pathological processes obstructing the flow and absorption of the fluid. Dandy has carried out some excellent work and on the basis of his observations and experimental results, he has established a classification of types of internal hydrocephalus. Fraser and Dott have continued this work and have expanded it in a few

directions. The surgical treatment based on this work has yielded, as is inevitable when the foundation is sound, better results than were formerly attained.

Tanner has collected much information concerning tumours of the testis. He has elicited the fact that of the malignant growths the soft, cellular carcinomatous type is the commonest and that sarcoma is extremely rare, if it exists at all. The prognosis is said to be very bad. Radical operation with removal of the lymphatic drainage area as far as the kidney is practised by the majority of surgeons.

In contrast to this method of combating the bad prognosis in malignant disease of the testis, surgeons are now urging that in cancer of the tongue, the operation should at first be limited to the removal of the tongue itself; the lymphatic glands can be removed subsequently, should metastatic growths appear.

It is noted that surgeons are manifesting a predilection to tendons and fascia as suture material, particularly if the material can be taken from the patient undergoing an operation.

Pædiatrics.

Of all the special branches of medicine that concerned with diseases of children is the least likely to provide special material for a record of unusual achievements. The majority of the problems in paediatrics are in fact ordinary medical problems adapted to the peculiar conditions of early life. Moreover, physiological knowledge rests on embryological data as well as on the bio-physics and biochemistry of independent life. It is, therefore, not surprising that very little new of particular importance has to be recorded for the year.

Much interest has been awakened in Australia in the incidence and pathology of dysentery in children. Some significant work has been carried out by Marjory Little on the prevalence of bacillary and amoebic dysentery. Beare has investigated the extent of dysenteric infections among children suffering from so-called summer diarrhoea. Webster and others have also contributed to this knowledge. The result of these studies and of the discussion at the Australasian Medical Congress (British Medical

Association) has been to establish the aetiology and pathology of these infections among children in Australia and thus to lay a reliable foundation for the adoption of preventive measures.

The question of the feeding of infants has also been prominently before the medical profession during the year. The uncompromising advocates of breast feeding have registered a distinct advantage over those who would recommend humanized milk, various emulsions and other substitutes. The possibility of re-establishing the mammary secretion after considerable periods of inactivity has been demonstrated on several occasions.

The publication of a report by the Accessory Food Factors Committee appointed jointly by the Medical Research Council and the Lister Institute, entitled "Studies of Rickets in Vienna, 1919 to 1922," has awakened much interest in all parts of the world. The members of the Committee have been frank in admitting that Huldschinsky recorded in 1919 the effect of the radiation from the mercury vapour quartz lamp in healing the bone lesions of rickets. Palm was probably the first to recognize the fact that sunlight was a determining factor in the aetiology of rachitis. Raczyński in 1912 showed that light exercised an important influence in regulating calcium metabolism in puppies, while Buchholz noted improvement in rachitic children after treatment by exposure to radiation from incandescent electric lamps. Others soon confirmed Huldschinsky's findings. The committee working in Vienna was not slow in utilizing this observation, with the result that a mass of evidence was collected to prove that ultra-violet rays play an important part in the prevention and healing of rickets and their absence is largely responsible, at all events in Europe, for the development of the disease. The report is a monument of industry and records very careful work carried out under unusually favourable conditions. It is gratifying to note that one of the members of the committee is an Australian, Elsie Dalyell.

Talbot, Sisson, Moriarty and Dalrymple have carried out some interesting observations on the basal metabolic rate of premature infants. They have found that the premature infant produces less heat than the normal infant and consequently re-

quires greater protection against heat loss. The heat production, expressed as calories per unit of body surface, seems to vary rather with age than with weight. Moreover, there does not appear to be any parallelism between the heat production of a premature infant and its prospects of establishing itself.

Stevens and Johnson have described a new eruptive fever in children. It is characterized by pyrexia, conjunctivitis and an eruption consisting of red or purplish macules, becoming papules in a few days. The rash lasts into the third week.

The employment of transfusion of blood after exsanguination as a method of treatment of burns in children has received favourable notice by Robertson and Boyd. These authors assert that a toxin comprising two component parts is either adsorbed on to or absorbed by the red blood cells and consequently the initial bleeding is undertaken to remove the toxin.

Pyloric stenosis and celiac disease have been discussed in the course of several excellent papers in various journals. No new doctrines have been evolved.

Neurology and Psychiatry.

During the year epidemic encephalitis has received more attention than any other subject in neurology. The sifting of the accumulated pile of clinical and pathological material by experts working for the British Ministry of Health has been useful. The form known as *encephalitis lethargica* is now conceded a place as a definite entity. A filtrable virus is supposed to be its cause. Of the many clinical varieties there is, first of all, the one described by Netter. This is characterized by lethargy, fever and oculo-motor palsy. The second form is the Parkinsonian. In the third place the myoclonic variety is regarded also as common. The occurrence of mental disturbance must be remembered. The diagnosis abounds in pitfalls. No specific remedy has yet been discovered.

Concerning *herpes zoster* and *herpes facialis* work by Marinesco and others goes to prove the existence of a responsible organism. It is held by some that this micro-organism is ultra-microscopic and allied to the micro-organism assumed to be the cause of epidemic encephalitis.

The American Association for Research on Nervous Diseases has published its report on disseminated sclerosis; the conclusions are mainly of the nature of disproof. No pronouncement can be made on the question whether the disease is primarily degenerative or inflammatory, nor can the alleged existence of a causal spirochete be confirmed.

Alterations of the reflexes in cases of spinal lesions have been further studied by Babinski among others. Knowledge of these phenomena serves as a guide to the intensity and the localization of the lesion. Sicard's advocacy of radiography after injection of "Lipoidal," an opaque fluid, into the spinal theca is obviously commendable for the detection of intra-spinal tumor.

Reference should be made to the researches of Royle and Hunter into the significance of the sympathetic innervation of voluntary muscles and into the part played by the sympathetic nerves in maintaining muscle tone and posture.

Clark has pointed out in connexion with endocrine therapy that it rests on a solid foundation only when the destruction of a gland produces a characteristic syndrome, when extracts of the organ relieves this syndrome and when tests have been evolved by which the activity of the extract can be measured. He holds that polyglandular administrations are as far removed from rational therapy as is the writing of a charm on a piece of paper and the giving of this piece of paper to the patient for him to swallow.

The social aspect of mental deficiency has been widely discussed. It is generally agreed that society owes to itself the duty of segregating the defectives in proper institutions or colonies. For those who cannot be segregated, special educative facilities should be provided. All authorities realize that the control of the mentally deficient persons must be life-long and that it is a fundamental mistake to deal with the problem as if it were merely a matter of training and subjecting to discipline children and adolescents. Sterilization as a measure of control is regarded by the majority as having no advantages over adequate segregation; besides it has found to be unenforceable.

Abstracts from Current Medical Literature.

OPHTHALMOLOGY.

Congenital Crescents of the Optic Nerve.

IDA C. MANN (*The British Journal of Ophthalmology*, August, 1923) has suggested the causal mechanism of congenital optic crescents from a study of the embryology of the optic vesicle. These crescents occur below the disc in 67%, in contrast with the myopic crescents which are temporal in 79%. The inferior crescent especially may be explained by consideration of the chorioidal fissure. Examination of a vertical section through an optic disc with an inferior crescent shows that at the upper edge the nuclear and pigment layers end by blending with each other at the margin of the disc. At the lower edge the pigment layer does not extend up to the margin of the disc. At the upper edge the pigment layer indents or constricts the nerve at its exit from the eye. This appearance is absent below. Normally there is an eversion of the unpigmented inner layer of the optic cup along the edges of the chorioidal cleft in its upper part. It is more noticeable in the chick, but occurs also in the human embryo. When fusion has occurred between the lips of the fissure, there is a little mass of unpigmented inner layer cells left in continuity with the outer pigment layer and separated from the inner layer. This mass of inner layer tissue may disappear after fusion, but it may persist and, if it persists, nerve fibres are able to grow into the everted portion and leave the eye not only at the upper end of the cleft, but along a varying portion of the cleft below this. This is most highly elaborated in the chick, forming the cauda of the nerve and in the human subject the inferior crescent.

Hernia of the Vitreous.

L. C. PETER (*American Journal of Ophthalmology*, August, 1923) reports several cases of hernia of the vitreous into the anterior chamber studied by means of the Gullstrand lamp and corneal microscope. Twice it followed traumatic cataract; in one patient it followed dissection of the after cataract. Special interest attaches to cataracts operated upon by the Smith and Barraquer methods. Several instances were observed in which the eye operated upon by the Smith method was the site of blemishes from the operation (the iris was drawn up into the wound) and yet the hyaloid membrane was smooth and intact, whereas the eye operated on by the Barraquer method gave evidence of perfect technique, but was the site of a split hyaloid membrane with vitreous hernia. It is evident that more trauma was applied to the hyaloid membrane by the suction method than

by expression from without. It would be interesting to examine all eyes subjected to the operation of needling by the slit lamp to see if vitreous hernia were present. The author's conclusion is that operation should be carried out in such a manner that subsequent needling would not be required.

Bactericidal Power of "Argyrol."

R. C. CHENEY (*American Journal of Ophthalmology*, August, 1923) has published an elaborate inquiry on the question of the bactericidal property of "Argyrol." Experimenting with staphylococci in suspension in considerable numbers, he found the average time of diminution in growth to be two hours. Further experiments were made with the number of bacteria to a much smaller unit of volume and quite different results were obtained. Considerable diminution of growth took place within one to two minutes. Basing his conclusions on the results obtained by experimentation in regard to their effect on pus, the author states that a 1% solution of silver nitrate is greatly superior to either "Argyrol" or "Protargol" in the prophylaxis of ophthalmia of the new born. Mechanical cleansing in clinical work is so important and effective that it is difficult if not impossible to assess the value of the germicides employed.

Congenital Miosis.

S. HOLTH AND O. BERNER (*The British Journal of Ophthalmology*, September, 1923) describe three cases of congenital miosis or pinhole pupils. It is a rare condition and must not be confused with spinal miosis from paralysis of the cervical sympathetic. The first patient, a woman, twenty-one years old, was first seen in 1897. Her pupils were 0.3 millimetre and 0.5 millimetre in diameter with slight eccentricity upwards. She suffered from pain and headache due to spasm of accommodation and inability to see in twilight. With atropine her pupils measured 2.5 millimetres and her myopia dropped from -10 diopters and -12 diopters to -1.75 diopters and -1.25 diopters with small cylinder. The vision was %. All pain was relieved. As atropine caused conjunctivitis, scopolamine was used for twenty-six years, a drop every morning. There were no traces of pupillary membrane or synechiae. Her sister, aged thirty years, had similar pupils, but smaller and slit-like. They were increased in size to two millimetres with atropine. She had no spasm of accommodation. Her myopia of seven and eight diopters was unaltered by mydriasis, but twilight vision was much improved. In 1919 scopolamine lost its effect and an iridectomy upwards was performed. She died suddenly in 1920 and the eyes were removed for examination. A twin brother of this patient was seen in 1919, when fifty-two years old. He had no headache or spasm. He was emmetropic, had % vision and could

read "J1" type without glasses. His pupils were about 0.75 millimetres in diameter and were increased to two millimetres with atropine. He preferred to be without a mydriatic as it compelled him to use glasses for reading. He died three years later and the eyes were removed for examination. Berner describes in detail the anatomical condition found. The main feature was the absence or poor development of the dilator fibres.

Tourneau's Reaction.

P. G. DOYNE (*The British Journal of Ophthalmology*, September, 1923) examined the eyes of forty patients suffering from general paralysis of the insane for the presence of Tourneau's reaction. The reaction may be described as follows: When a man whose ocular apparatus is normal, looks strongly to the right and maintains this position, the right pupil becomes larger than the left. Isocoria is the rule in anterior fixation, anisocoria becomes the rule in lateral fixation. The abducted pupil dilates and not the adducted pupil which contracts. Subjectively there is a feeling of strain in maintaining the lateral position. Of the forty patients examined the reaction was present in fifteen, absent in eighteen, doubtful in four and unilateral in three.

LARYNGOLOGY AND OTOTOLOGY.

Rhinosporidiosis.

J. H. ASHWORTH AND A. LOGAN TURNER (*The Journal of Laryngology and Otology*, June, 1923) report the case of an Indian medical student who was born and lived up till the age of twenty years at Ernakulam, Cochin, on the south-West cost of India. He went to Edinburgh in 1913 and had been inconvenienced of three years by left-sided nasal obstruction with viscid mucous discharge and occasional epistaxis. The cause was found to be a pinkish coloured mass in the form of slender filiform or narrow leaf-like processes the surfaces of which were studded with a number of minute pale spots due to the presence of sporangia of the *Rhinosporidium seeberi* in the tissue. Exceedingly friable in texture it bled very easily when touched. The mucus contained a large number of sporangia and spores. After several removals by the snare the Rouge operation permitted a more thorough access and the growth was found springing from a wide surface of the left and slightly from the right side of the septum and from a small area below and anterior to the left middle turbinal. The whole of the infected mucosa was carefully dissected out. The structural appearance of the growth was similar to an ordinary nasal mucous polypus with epithelial layer of ciliated columnar epithelium containing many folds and indentations, often forming pseudo-cysts. In many of the pseudo-cysts numerous spores were observed. The sub-epithelial connective tissue, fibro-myomatous

in character, contained a number of thin-walled blood spaces. The tissue cells were separated by a structureless fluid, in parts having the character of small undefined cysts and forming a clear channel under the surface epithelium. Numerous parasites in all stages of development lay in the myxomatous tissue. Thinning of the surface epithelium, due to accumulation of spores and leucocytes beneath it, terminated in rupture and in an escape of the spores and leucocytes which passed into the nasal secretion. Over thirty cases of rhinosporidiosis in man have been recorded, always in the male sex, the majority of the patients being natives of India. The growths are usually attached to the anterior and upper part of the nasal septum. The mode of infection is unknown. Every attempt to inoculate animals and to prepare culture has proved unsuccessful. The rhinosporidium which has been provisionally placed in the sub-order *Chytridinae* of the lower fungi (*Phycomycetes*), in its earliest stage is about six μ in diameter, spherical or oval with chitinoid envelope, vacuolated cytoplasm and a vesicular nucleus. It always retains the same shape. When the parasite reaches fifty μ to sixty μ its nucleus begins to divide. By the time it has reached its greatest size—about one hundred and forty μ and the fourteenth nuclear division has taken place, it is called a sporangium; its cytoplasm has been divided and has produced about sixteen thousand nuclei. The young spores are each about three μ in diameter. About two-thirds of these come to maturity and escape through the pore in the wall of the sporangium. Treatment consists in the surgical removal of the infected areas of tissue, although in a case of conjunctival infection R. E. Wright successfully employed drops of a 2% aqueous solution of tartrated antimony applied thrice daily.

Excessive Sounds and the Cochlear Apparatus.

T. RITCHIE RONGER (*The Journal of Laryngology and Otology*, February, 1923) investigated the hearing of forty-eight workmen from the Leith workshops of all ages, some of whom alleged that they were not deaf at all. The lower limit of the scale was tested with a fork of thirty-two vibrations per second and upper tone limit by the Schulz-Struycken monochord. The author thinks the normal upper tone limit in young persons does not usually exceed eighteen thousand direct vibrations, while between forty and fifty years of age the average is as low as fourteen thousand. Tuning forks A₁ and C₂ (four hundred and nineteen and five hundred and twelve vibrations respectively) were employed, as repeated testing showed that the predominant noises in the workshops fell between these points in the scale. Fork C₄ (two thousand and forty-eight) was also employed as being well removed upwards from these median forks. It was found

that in the very early stages depreciation had occurred and that the depreciation was always in that part of the scale corresponding in pitch to the predominant noises of the workshop. In individuals who had passed the early stage, depreciation was found in all parts of the scale, but was more noticeable in the part corresponding to the predominant noises. In the very advanced stages the depreciation was uniform. He quotes Putelli, of Venice, to the effect that among railwaymen exposed to the shrill engine whistle depreciation for high forks C₄ and C₅ was demonstrated without depreciation in the lower parts of the scale. Practically all workers on the effect of sound on the cochlear agree that it is essentially an end-organ change with ascending degeneration to the ganglia. Siebenmann from his researches concluded that a shrill pipe produced changes first and predominantly in the lower part of the basal coil of the cochlea, C₅ in the upper part of the same basal coil, C₄ in the part between the first and second coil C₂ in the second turn, C between the second and third, A in the third coil. As the structure of the cochlear apparatus is essentially similar in man and animals, it may be assumed that the pathological condition in the cochlea, corresponding to the clinical signs of boilermakers' deafness described above, was a degeneration of the organ of Corti, localized or generalized according as the condition was an early or long standing one. Some of the men examined stated that they were not deaf. The ordinary range of the human speaking voice falls well below A₁ and C₂, probably ranging from one hundred to two hundred vibrations. These patients only showed depreciation for forks A₁ and C₂, not for those below and above these.

Radium in Cancer.

HENRY HALL FORBES presents a résumé of the work of radiologists in the United States of America on the use of radium in the treatment of cancer of the larynx and oesophagus (*The Journal of Laryngology and Otology*, January, 1923). One investigator in 1921 was able to collect from American literature only eleven persons with cancer who were said to be cured by radium treatment alone. Of these only three had lived more than five years without recurrence. He concluded that there was not sufficient reason for the substitution of radium when surgery was indicated, but that for inoperable growths the use of radium was certainly warranted. He also stated that radium was useful as a pre-operative and post-operative measure. Some workers use the radium capsule in laryngeal and oesophageal cancer, but the majority prefer radium needles. Lewis thinks that radium alone is indicated in inoperable cancer of the larynx where its analgesic effects are of benefit. Field employs the needles

introduced through the direct laryngoscope. Freer has devised a special tubular applicator for delivering radium emanations which are contained in small enamelled silver tubes. He holds that the emanations arrest laryngeal carcinomata and that laryngotomy or laryngectomy is not indicated until the emanations have been tried. If the submaxillary or cervical lymphatic glands are involved, treatment with heavy doses of radium rays applied from without should be used. Janeway in 1917 found that of twenty-two patients with oesophageal cancer treated by radium only one retrogressed. Simpson used radium emanations on a bougie for oesophageal cancer; dysphagia was greatly relieved and he had encouraging results in all but hopeless conditions. Mills uses X-rays for localization and radium in a tube container. He found that his fifteen patients improved, the most immediate effect being the relief of dysphagia. Hanford localizes the growth by the fluoroscope and X-rays and by sounding with olivary bougies. He uses a special radium carrier. He has had four apparent cures. Greene uses the seed treatment of radium emanations by introducing one small glass capsule into the tumour by a trocar to every cubic millimetre of its extent. L. W. Dean finds the results of cancer radiation unsatisfactory and considers that the improvement, when it occurs, is but temporary.

Ionization in Chronic Middle Ear Suppuration.

STEPHEN YOUNG (*The Journal of Laryngology and Otology*, May, 1923) concludes that about half of those middle ear suppurations which fail to respond to conservative measures, will be cured by efficient ionization treatment. He considers that the patient should already have had an efficient course of conservative treatment without effect, that there should be no naso-pharyngeal condition requiring attention, no organized granulations in the tympanic cavity or mastoid antrum, no attic perforation with cholesteatoma nor marginal perforations with mastoid or Eustachian tube infection. He employs Friel's method with a solution of 4.5 grammes of zinc sulphate and sixty cubic centimetres of glycerine in one litre of water. This is diluted at the time of using with an equal quantity of warm water. A vulcanite speculum is used with a special terminal of its own. A fine wire running from it down the inside of the speculum nearly to its tip provides the positive pole, the negative electrode being a broad zinc plate, lint-covered and soaked in saline solution applied to the forearm. The current is very gradually increased until it reaches three to four milliamperes, where it is allowed to remain for eight to ten minutes and then gradually diminished. If one treatment is not enough it may be repeated after a week's interval.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE WESTERN AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Perth Hospital on October 17, 1923, Dr. D. M. McWHAE, C.M.G., C.B.E., the PRESIDENT, in the chair.

Dermoid Tumour.

DR. W. TRETHOWAN showed an unusual example of a dermoid tumour removed from an unmarried woman, aged twenty-four years.

Nasal Obstruction.

DR. T. L. ANDERSON, O.B.E., showed a patient with a gross degree of nasal obstruction. The radiograms revealed almost complete dulness of both maxillary antra. Dr. Anderson thought that this was suggestive of the presence of bony new growth.

Congenital Absence of the Left Dome of the Diaphragm.

DR. D. S. MCKENZIE reported the condition discovered at the *post mortem* examination of the body of a fully developed male child of Italian parentage. The body had been brought to the hospital morgue by the police. It had been ascertained that the confinement had been attended by an elderly midwife who had stated that the birth was quite natural and of the usual duration. A few minutes after birth the child had become blue and had ceased to breathe. Artificial respiration and other means of resuscitation had been tried without avail. The Coroner had therefore been notified.

At the *post mortem* examination the body, that of a male full time child, had been somewhat blue in appearance. On opening the thorax and abdomen it had been seen that the left dome of the diaphragm was absent and the peritoneal and pleural cavities possessed no line of demarcation. The jejunum, ileum and caecum and spleen had been found in the left pleural sac. The left lung had been represented by two small buds. The pericardium and heart had been found on the right side. The large bowel had been greatly dilated and the anus perforate. The liver, pancreas, stomach and kidneys had been normal in position and shape. The peritoneum had appeared to be directly continuous with the parietal pleura.

Dr. McKenzie thought that the condition of the large bowel suggested Hirschsprung's disease and said that there was no sign of any obstruction to account for the dilatation.

An Unusual Abdominal Condition.

Dr. McKenzie also reported an unusual condition which had been discovered during the *post mortem* examination on the body of a girl, aged nineteen years. The body had been brought to the hospital morgue as the doctor in attendance had not been able to certify as to the cause of death. The history given had been that of a sudden attack suggestive of intestinal obstruction. The attack had lasted for twelve hours. Before parental consent had been obtained for the performance of a laparotomy the patient had died. On examination the body had appeared to be that of a well developed young woman. A scar, apparently from the "gridiron" operation for appendicitis had been present on the abdominal wall. The contents of the thorax had been normal. Within the abdominal cavity there had been noticed considerable distension of the jejunum and ileum. Overlying the ileo-caecal junction there had been found a round multilocular cyst. Over this the ileum had been tightly stretched and had become gangrenous. The cyst had been shelled out with ease. On being opened it had been found to consist of three compartments. The first compartment had been full of a grumous sebaceous material with felted hair. The grumous material had been accompanied by a fluid resembling aluminium paint in appearance. The crystals had been found on microscopical

examination to consist of cholesterin. The second compartment had been composed of an accumulation of blood vessels, apparently a rudimentary vascular system. The third compartment had been full of fluid and had contained a blind tube about 1.25 centimetres in length. Possibly it represented a rudimentary gut.

Dr. McKenzie said that the points of interest were several. In the first place the operation for appendicitis had failed to reveal what had probably been the true cause of the signs in the right iliac fossa. In the second place the cyst had been purely intra-peritoneal and had shelled readily from its bed. The tumour was without doubt a teratoma.

Pyelitis.

DR. F. A. GILL read a paper entitled "Pyelitis" (see page 29).

DR. R. H. CRISP enlarged on the difficulty in diagnosing pyelitis in young children. He also referred to the comparative frequency of ascending infections and laid stress on the necessity of cleaning up the possible primary focus of infection such as that in the tonsils, gastro-enteritis or *otitis media*. He remarked on the difficulty in rendering the urine alkaline and said that it was often necessary to increase the dose of potassium citrate up to eight grammes (two drachms) every three hours. The question of renal lavage in young infants presented great difficulty. The suggestion of injecting colloidal silver into the bladders of female infants was worthy of consideration.

DR. D. M. MCWHAE congratulated Dr. Gill on his paper. He confessed that he was sceptical as to the presence of a pyelitis in large numbers of individuals who were the subject of light *Bacillus coli communis* infections.

DR. A. W. FARMER referred to some patients who had manifested great intolerance to potassium citrate.

DR. J. J. HOLLAND asked whether it was frequently the case that a pyelitis would clear up after treatment of the primary focus such as was found in infected tonsils.

DR. D. S. MCKENZIE pointed out that to naked eye examination the urine of patients with pyelitis presented a peculiar opalescent appearance. In regard to the causation of pyelitis it was recognized that the condition was common after pregnancy and after gross constipation. In his opinion in the majority of instances pyelitis was due to stasis in the lower bowel. He also laid stress on the importance of removing an obvious focus.

In reply Dr. F. A. GILL admitted the importance of testing the reaction of the urine daily in pyelitis. The administration of four grammes of potassium citrate every two hours was generally sufficient to render the urine of an adult alkaline. Pelvic lavage in children was coming into vogue. It had been carried out in females as young as two and a half years of age and in males at the fourth year. In reply to Dr. McWhae he said that a diagnosis of pyelitis was not made in the absence of symptoms. In the absence of focal sepsis it was justifiable to regard six colon bacilli per plate as evidence of pyelitis. In reply to Dr. Farmer, Dr. Gill said that the administration of small doses of potassium citrate at frequent intervals was followed by little tolerance. Sodium bicarbonate given by the bowel was usually tolerated better than potassium citrate given by this route. In reply to Dr. Holland, Dr. Gill said that it was essential to remove infective foci. In the face of a pyelitis disappearing after removal of a diseased appendix the result was probably due to the close anatomical relationship of the parts.

An Operation for Uterine Prolapse.

DR. F. A. GILL also read a description of an operation for uterine prolapse (see page 37).

NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected members of the Victorian Branch of the British Medical Association:

BENSON, FRANCIS RUPERT IGNATIUS, M.B., B.S., 1923
(Univ. Melbourne), St. Kilda.

CHERRY, THOMAS, M.B., 1889; Ch.B., 1890; M.D., 1893;
Ch.M., 1894 (Univ. Melbourne), Glen Iris.

CLARKE, RALEIGH, M.B., B.S., 1923 (Univ. Melbourne), Elsternwick.
 DAVIS, JOSEPH, M.B., B.S., 1923 (Univ. Melbourne), Mildura.
 OLDHAM, ALFRED, M.B., B.S., 1923 (Univ. Melbourne), Infectious Diseases Hospital, Fairfield.
 PRYDE, DONALD, M.B., B.S., 1923 (Univ. Melbourne), Infectious Diseases Hospital, Fairfield.
 SULLIVAN, THOMAS GEOFFREY, M.B., B.S., 1923 (Univ. Melbourne) Culgoa.

Medico-Legal.

LILIAN COOPER FUND.

THE following additional subscriptions have been received to the fund to defray in part the expenses incurred by Dr. Lillian Cooper in a recent action at law (see THE MEDICAL JOURNAL OF AUSTRALIA, October 6, 1923, page 375; October 27, 1923, page 452; and November 24, 1923, page 559).

Five Guineas.—Dr. G. P. Dixon, Dr. S. F. McDonald, Dr. T. R. McKenna.

Two Guineas.—Dr. S. V. O'Regan.

One Guinea.—Dr. D. A. A. Davis, Dr. Paul Voss.

The fund has been closed. In the letter sent to Dr. Lillian Cooper by Dr. G. W. Macartney, the Honorary Treasurer of the fund, he writes: "On behalf of the medical profession of Queensland I have pleasure in forwarding you herewith a cheque for £351 4s. 1d. towards the expenses incurred by you in the recent law suit, in recognition of the valiant fight put up by you in which it is felt by many of us that the interests of the profession as a whole were involved."

We have received the following letter from Dr. Lillian Cooper.

Dear Sir,

May I crave space in your journal to record my appreciation of the generous assistance I have received from many friends in the medical profession towards my expenses in the recent law case. It is impossible to write to every one as I do not know the names of all who subscribed and being away from home I cannot look them up.

Trusting you will be able to comply with my request,

I am, dear sir,

Yours faithfully,

LILIAN V. COOPER.

Correspondence.

PUBLIC HEALTH AND MUNICIPAL TAXATION.

SIR: In his inaugural address at the Congress, the President stressed the necessity in the interests of a healthy population of an abundance of fresh air and sunlight and denounced as objectionable the municipal taxation of unimproved land values. One could wish that the President had gone on to explain the matter further. If it be assumed that rates are necessary and that someone must pay them, is it not reasonable to expect payment in proportion to the area and value of the occupied area? This is what rating on unimproved land values means and the alternative is rating on improvements, including houses and additions to houses, so that the enterprising resident who would add rooms to his house or replace an obsolete structure by a modern one embodying all hygiene improvements, has as his only recognition a visit from the valuer with an increased rate notice. The tendency to crowd

houses on small allotments has been met by enacting by-laws regulating the size of resident lots and this may be done, whatever system of rating obtains. This, no doubt, has been practised in New Zealand, for instance, where the reformed system of municipal rating is very general and a review of the statistics relating to the health of the people does not seem to show any ill-effects resulting from the change. Similarly it might be mentioned that those districts in Victoria, where the new system has been introduced, are not those where rows of small houses are crowded together and resident flats are numerous. Rather the reverse is true and these latter have always with the help of vested interests strenuously resisted the change. That the medical profession in general does not share the view expressed by the President, is shown by its warm support of the reform wherever introduced.

Yours, etc.,

J. A. BISSET.

16, Collins Street, Melbourne,
 November 21, 1923.

SIR: The study of economics and the bearing of economic problems on medical studies, more particularly those embraced in public health, is one that appears to have been almost absolutely neglected by medical men and so it was with great pleasure that in reading the address of our learned President, Mr. Syme, I noticed that he touched on an economic problem.

But economics is no different from any other science and laws govern the various relationships of one problem to another and to the whole just as surely as they do in chemistry or physics and it is incumbent on anyone who occupies a high and influential position in the profession, to understand economics before he enters into the relationships between it and medical problems. With all due respect, Sir, I make bold to assert that our President has not made a study of economics or he could not have made the statement which called my attention to the matter and which is as follows: "The principle of municipal taxation on unimproved land values in force in many residential suburbs seems objectionable from a health point of view leading to a restriction of free spaces round dwellings and diminishes the amount of sunlight and pure air. It also lessens the opportunities for gardening, a most healthful recreation." I challenge Mr. Syme to give evidence supporting any one of these sweeping assertions and further make bold to state that taxation of unimproved land values has the approval of all leading modern economists.

Taxation or rating on unimproved land values has never been in force in Melbourne, South Melbourne, Richmond, Collingwood nor Fitzroy; yet would Mr. Syme or anyone else deny that slums exist in any of these cities? Why, even in Brighton where I live I can show Mr. Syme houses built on slum frontages fifteen to twenty feet. Rating on unimproved land values has been in full operation in Queensland and New South Wales for years; can Mr. Syme prove that in those countries it has had a detrimental effect on the public health? I am in a position to positively assert that it has not and, further, wherever it has been adopted in Australia there has never been a reversal to the now obsolete method of rating houses and other improvements which has everywhere been a factor leading to exactly those conditions which our President asserts would follow from rating on unimproved land values.

I must apologize for the length of my remarks, but Mr. Syme's statement has been broadcast throughout Australia and coming as it does from one of our greatest surgeons, a man of no mean importance in this community, it has had a most damning effect on a reform which many eminent men are endeavouring to bring about in this State.

I may, in conclusion, add that letters of protest were sent by medical men to the daily press of this city follow-

ing upon the publication of Mr. Syme's address, but they were not published, hence the necessity of asking for publication in your journal.

Yours, etc.,

PAUL G. DANE.

80, Collins Street, Melbourne,
December 13, 1923.

ASPIRATION OF THE TONSIL.

SIR: Dr. Lendon's report of a case of aspiration of a tonsil during an operation for removal of same is of great interest, especially because the tonsil seems to have passed right through the larynx to the subglottic area.

The following account of a somewhat similar case may be of interest. While removing tonsils and adenoids from a girl, *atatis* fourteen years, at the Central London Throat and Ear Hospital, the right tonsil slipped off the newly sharpened guillotine I was using. This was followed by immediate cessation of respiration and deep cyanosis. Manual examination showed the tonsil to be impacted in the larynx and owing to the bleeding it was impossible to get a grip on to the tonsil and remove it.

Patient was immediately inverted and while tracheotomy instruments were being procured, the patient coughed out the tonsil, to my great relief.

The patient was being operated upon in the sitting position and ethyl chloride was the anaesthetic used. It was, I think, the quick recovery after ethyl chloride anaesthesia which enabled the patient to cough out the tonsil.

Yours, etc.,

RICHARD FRANCIS, M.B., Ch.M. (Sydney).

185, Macquarie Street, Sydney,
November 10, 1923.

TWO UNUSUAL CASES.

SIR: Mr. M. M. was admitted to the Royal Prince Alfred Hospital from Wagga for cirrhosis of liver (non-alcoholic) in February, 1922. He was tapped for ascites there two or three times and sent home to die. He lived till November, 1923, was tapped sixty-three times and lost one hundred and fifty-eight gallons of fluid. Up to the last two or three weeks he used to get up the day following the tap and walk about the house and though thin did not lose weight appreciably till the last two or three weeks, when he started to vomit almost pure bile. He had considerable gastric pain with or without food and finally refused it altogether and died very emaciated. Liver dulness had disappeared altogether.

Another case somewhat out of the ordinary was that of a girl of about eighteen years with pneumonia. On the fifth day whilst running a high temperature she got out of bed, walked down a steep gully about two hundred feet deep and laid down in a shallow waterhole. She was found soon after and carried back to bed. I saw her about an hour later; she seemed quite comfortable and had her crisis next day, making an uninterrupted recovery.

Yours, etc.,

W. M. HELSHAM.

Richmond,
November 27, 1923.

Congress Notes.

AUSTRALASIAN MEDICAL CONGRESS (BRITISH MEDICAL ASSOCIATION).

Deep X-Ray Therapy.

OUR attention has been called to the omission of the name of Dr. H. Flecker, of Melbourne, in connexion with the demonstration of patients treated for malignant disease by deep X-radiation. Dr. Flecker and Dr. Cledinnen together were responsible for this demonstration.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A MEETING of the Senate of the University of Sydney was held on November 5, 1923.

The degree of Master of Surgery (Ch.M.) was conferred upon Dr. E. Trenerry *in absentia*.

A letter was received from the Premier's Department intimating that the Honourable Sir Joseph H. Carruthers, M.A., M.L.C., had resigned his position on the Senate as from October 22, 1923. It was decided to forward this information to the President of the Legislative Council.

In accepting the resignation of Mr. H. E. Barff, M.A., Warden and Registrar as from August 31, 1924, the following resolution was passed by the Senate:

That, in accepting most regretfully the resignation of Mr. H. E. Barff, M.A., C.M.G., from the office of Warden and Registrar, which under its present or earlier title he has held for forty-two years, also from the active staff to which he has belonged for forty-eight years, during which time the University grew from a small academy of four professors and about fifty students to a staff of nearly two hundred and fifty and more than three thousand students, the Senate desires to express the admiration with which the whole University regards every aspect of his career, the affection it feels for him personally, with the gratitude it owes to his unmeasured and unselfish devotion of great powers of mind and qualities of character wholly to the service of the University in its ideal aims as well as in its practical management and the Senate earnestly hope that he may be granted good health and many more years of life for the enjoyment of the leisure that he has earned by such performance of duty as places him historically among the chief makers of the University and will remain its model of highest executive capacity and achievement."

Professor Holme and Brigadier-General Mackay were appointed representatives of the Senate on the Board of Directors of the Union and Dr. Constance D'Arcy and Mrs. Lyons, B.A., were appointed representatives of the Senate on the Board of Directors of the Women's Union.

The following were re-elected members of the University Extension Board for the ensuing year: The Chancellor, Vice-Chancellor, the Warden, Judge Backhouse, the Honourable Sir H. Y. Braddon, Professor MacCallum, Mr. J. Nangle (Senate Representatives), Professors Holme, Woodhouse, Todd, A. E. Mills, R. C. Mills, Vonwiller, Mr. G. Portus (Teaching Staff), Messrs. E. B. Taylor, J. M. Taylor (unofficial members), Brigadier General Mackay, Secretary.

The Annual Report of the University Extension Board for the year 1923 was adopted and ordered to be printed.

The Twelfth Annual Report of the Sydney University Union and the Eighth Annual Report of the Sydney University Women's Union were adopted.

The following re-appointments were made for a period of twelve months:

Faculty of Medicine.—Tutors in Obstetrics: Dr. A. J. Gibson, Dr. R. I. Furber and Dr. F. Brown Craig.

Dr. R. H. Todd was re-appointed Lecturer in Medical Jurisprudence in the Faculty of Medicine for a period of three years.

Dr. A. W. Holmes à Court was appointed co-examiner with Dr. J. Macpherson in therapeutics and *materia medica* at the forthcoming fourth degree medical examination.

The Peter Bancroft Prize was founded in 1923 by a bequest of £1,000 from the late Louise Bancroft, of Brisbane, for an annual prize in memory of her husband, Peter Bancroft. This prize is awarded for the paper giving evidence of the best research work, not previously published, in medicine for the year. The prize is open to undergraduates or graduates in the Faculty of Medicine.

The examiners for the prize shall be the Professor of Medicine with such other examiners as may be appointed by the Senate.

No award shall be made unless the examiners shall certify that the record is of sufficient merit.

Applications for the above prize for 1923 should be sent to the Registrar on or before December 31, 1923.

A MEETING of the Senate of the University of Sydney was held on December 3, 1923.

The Honourable B. B. O'Connor, M.L.C. and Professor C. E. Fawcitt were present for the first time and were cordially welcomed by the Chancellor, His Excellency Sir William Cullen.

The degree of Master of Surgery was conferred *in absentia* upon Dr. D. A. A. Davis, of Brisbane.

The Senate confirmed the provisional nomination of Professor Harrison as its representative on the Advisory Committee appointed by the University, the Royal Society and the Linnean Society to assist the Customs Department relative to the export of Australian birds and animals.

The following appointments were made:

Dr. W. A. Ramsay Sharp, as Tutor in Surgery, Sydney Hospital; Miss Janet L. Carter, as Library Assistant vice Mr. J. W. Metcalfe, B.A., resigned.

The following re-appointments to the Teaching Staff were made:

Faculty of Medicine.—Dr. R. H. Todd (Medical Ethics); Dr. G. H. Abbott, Dr. R. Gordon Craig, Dr. St. J. W. Dansey (Clinical Surgery); Dr. Sinclair Gillies, Dr. C. B. Blackburn, Dr. E. W. Fairfax (Clinical Medicine); Dr. S. A. Smith, Dr. H. J. Clayton (Tutors in Medicine); Dr. M. C. Lidwill (Tutor in Anaesthetics); Dr. J. M. Gill (Clinical Medicine); Dr. C. E. Corlette (Clinical Surgery); Dr. L. W. Dunlop, Dr. G. C. Willcocks (Tutors in Medicine); Dr. H. C. Adams (Tutor in Anaesthetics); Dr. B. T. Edye, Dr. E. M. Little (Demonstrators in Pathology).

Department of Pharmacy.—Mr. T. Hannan (Demonstrator in Pharmacy).

Department of Zoology.—Miss Ethel Thomas (Demonstrator in Zoology).

The Faculty of Medicine reported the re-election of Professor A. E. Mills, M.B., Ch.M., as Fellow of the Senate and Dean of the Faculty of Medicine.

The Senate adopted the recommendation of the Faculty that the medical professors of the Faculty be appointed co-examiners with the Professor of Medicine for the award of the Peter Bancroft Prize (1923) and that Professor J. T. Wilson, M.A., M.B., Ch.M., F.R.S., of the University of Cambridge, be appointed an additional examiner for the M.D. examination.

The Faculty of Science reported that Professor C. E. Fawsitt, D.Sc., Ph.D., had been elected a Fellow of the Senate and Dean of the Faculty of Science. The Senate also adopted the recommendation of the Faculty that by-law, Chapter XIII., Section 17, be amended to include Entomology as one of the branches in which Bachelors of Science may proceed to the Doctor's degree.

The Professorial Board reported that Professor Sir Edgeworth David has been elected Chairman of the Professorial Board.

Obituary.

WILLIAM RITCHIE.

It is with much regret that we have to announce the death on January 2, 1924, of Dr. William Ritchie, of Armidale, New South Wales.

Births, Marriages and Deaths.

THE charge for inserting advertisements of Births, Marriages and Deaths is 5s., which sum should be forwarded in money orders or stamps with the notice, not later than the first post on Tuesday, in order to insure insertion in the current issue.

DEATH.

HOLMES.—On Saturday, December 29, 1923, at Newcastle, New South Wales, WILLIAM SMITHSON HOLMES, M.B., B.S. (Victoria University, Manchester), of Teralba, New South Wales, aged forty-five years.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered, under the provisions of the *Medical Act, 1912 and 1915*, as duly qualified medical practitioners:

- KING, CALLAGHAN JOHN McCARTHY, M.B., Ch.M., 1923 (Univ. Sydney), Alma, Rowena.
- MITCHELL, CHARLES FRANCIS, M.B., Bac. Surg., 1921 (Univ. Adelaide), Broken Hill.
- NIESCHE, FREDERICK WESTWOOD, M.B., Bac. Surg., 1923 (Univ. Melbourne), The Royal, Neutral Bay.
- O'NEILL, SYDNEY, M.B., Bac. Surg., 1917 (Univ. Adelaide); F.R.C.S., 1922 (Ireland), c.o. Commonwealth Bank, Sydney.
- SKINNER, CHARLES GUNN, M.B., Bac. Surg., 1914 (Univ. Edinburgh), Cessnock.
- VEALE, DORIS LYNE, M.R.C.S., 1921 (Eng.); L.R.C.P., 1921 (Lond.); M.B., B.S., 1921 (Univ. Lond.), Wangaratta.
- WILLIAMS, PATRICK MICHAEL, M.B., Ch.M., 1923 (Univ. Sydney), Glen Innes.

QUEENSLAND.

THE undermentioned have been registered, under the provisions of the *Medical Act of 1867*, as duly qualified medical practitioners:

- ARMSTRONG, HAROLD GILES, M.B., Ch.M., 1923 (Univ. Sydney), Brisbane.
- CHARLTON, NOEL BENSON, M.B., Ch.M. (Univ. Sydney), Townsville.
- CUNNINGHAM, ANTHONY BENEDICT, M.B., Ch.M., 1921 (Univ. Sydney), Richmond.
- EBRY, SYDNEY THEODORE, M.B., Ch.M., 1923 (Univ. Sydney), Brisbane Hospital.
- HENRY, ROBERT ERIC, M.B., Ch.M., 1923 (Univ. Sydney), Toowoomba Hospital, Toowoomba.
- HORN, HAROLD WILLIAM, M.B., Ch.M. (Univ. Sydney), Brisbane.
- NASH, REGINALD JAMES, M.B., Ch.M., 1923 (Univ. Sydney), Brisbane General Hospital, Brisbane.
- OSTINGA, ALEN JAMES, M.B., Ch.M., 1923 (Univ. Sydney), Brisbane General Hospital, Brisbane.
- SHEEHY, MARGARET MARY MADELEINE, M.B., Ch.M., 1923 (Univ. Sydney), Toowoomba.
- STOBO, JEAN SELDON, M.B., Ch.M., 1923 (Univ. Sydney), Lamington Hospital, Brisbane.
- WHEATLAND, FRANK TRAVIS, M.B., B.S., 1914 (Univ. Melbourne), Health Laboratory, Toowoomba.
- WILLIAMS, CLIVE GOWAN, M.B., B.S., 1922 (Univ. Melbourne), Indooroopilly.

Additional Registration.

- HOWARD, ARTHUR JOHN DE SIZE, Ch.M., 1923 (Univ. Sydney), Cleveland.

TASMANIA.

THE undermentioned have been registered, under the provisions of *The Medical Act, 1918*, as duly qualified medical practitioners:

- BARNETT, HARRY, M.B., Ch.M., 1923 (Univ. Sydney), Hobart.
- BEATTIE, IVO PAUL, M.B., B.S., 1923 (Univ. Melbourne), Fingal.
- GREEN, ALFRED WITHERS, L.R.C.P., 1876 (Lond.), M.R.C.S., 1877 (Eng.), Huon.
- LE SOUËF, ALBERT WADESON, M.B., B.S., 1916 (Univ. Melbourne), Federal Street, Hobart.
- PLAYER, CHARLES ERNEST, L.R.C.S. & P., 1894 (Edin.); L.F.P.S., 1894 (Glasg.), Kempton.

VICTORIA.

THE undermentioned have been registered, under the provisions of the *Medical Act, 1915*, as duly qualified medical practitioners:

ANDERSON, HUGH GEORGE, L.R.C.P. et S., 1918 (Edin.), L.R.F.P.S. (Glasg.), New Gisborne.
 ILLINGWORTH, HAROLD THORBURN, M.B. et Ch.M., 1920 (Univ. Sydney), 3, Beresford Street, Caulfield.
 ORCHARD, ETHEL ADELAIDE, L.R.C.P. et S., 1908 (Edin.), L.R.F.P.S. (Glasg.), "Tasma," Parliament Place, Melbourne.

Additional Diplomas Registered.

MCCALLUM, FRANK, Dip. T.M. et H., 1923.
 NORRIS, FRANK KINGSLEY, M.D., 1920 (Univ. Melbourne).

Names of Practitioners Restored to the Register.

HASTINGS, DAVID YOUNG, Rupanyup.
 SCOTT, ERIC NORHAM, Repatriation Department, St. Kilda Road, Melbourne.

NEW YEAR HONOURS.

It is with much gratification that we learn that Professor Henry Lindo Ferguson, Dean of the Faculty of Medicine at the University of Otago, has received the honour of knighthood. Professor Ferguson is personally well known in Australia and his work on ophthalmic subjects has long been recognized. We tender our congratulations to him.

INDEX TO VOLUME II., 1923.

It has come to our knowledge that some copies of the issue of December 29, 1923, were sent out without the Index to Volume II. of 1923 being enclosed. Members who have not received the index, should communicate at once with the Manager in order that copies may be forwarded to them.

Books Received.

A TREATISE ON ORTHOPEDIC SURGERY, by Royal Whitman, M.D., M.R.C.S., F.A.C.S.; Seventh Edition, thoroughly revised; 1923. Philadelphia and New York: Lea and Febiger; Demy 8vo, pp. 1005, with 877 illustrations. Price: \$9.00 net.

AN INTRODUCTION TO THE STUDY OF MENTAL DISORDERS, by Francis M. Barnes, Junior, M.A., M.D.; Second Edition; 1923. St. Louis: C. V. Mosby Company; Demy 8vo, pp. 295. Price: \$3.75 net.

DIAGNOSTIC METHODS, by Herbert Thomas Brooks, A.B., M.D., F.A.C.P.; Fourth Edition; 1923. St. Louis: C. V. Mosby Company; Demy 8vo, pp. 109, with 52 illustrations. Price: \$1.75 net.

DISEASES OF THE SKIN, by Richard L. Sutton, M.D., LL.D.; Fifth Edition, revised and enlarged; 1923. St. Louis: C. V. Mosby Company; Royal 8vo, pp. 1214, with 1069 illustrations and eleven coloured plates. Price: \$10.00 net.

MODERN ASPECTS OF THE CIRCULATION IN HEALTH AND DISEASE, by Carl J. Wiggers, M.D.; Second Edition, thoroughly revised; 1923. Philadelphia and New York: Lea and Febiger; Demy 8vo, pp. 670, with 204 illustrations. Price: \$7.50 net.

NON-SURGICAL DRAINAGE OF THE GALL TRACT, by B. B. Vincent Lyon, A.B., M.D.; 1923. Philadelphia and New York: Lea and Febiger; Demy 8vo, pp. 668, with 175 illustrations and ten colored plates. Price: \$10.00 net.

NUTRITION AND CLINICAL DIETETICS, by Herbert S. Carter, M.A., M.D., Paul E. Howe, M.A., Ph.D. and Howard H. Mason, A.B., M.D.; Third Edition, thoroughly revised; 1923. Philadelphia and New York: Lea and Febiger; Demy 8vo, pp. 751. Price: \$7.50 net.

Medical Appointments Vacant, etc..

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvi.

ROYAL HOSPITAL FOR WOMEN, SYDNEY: Honorary Surgeon.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30-34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmain United Friendly Society's Dispensary Friendly Society Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marrickville United Friendly Societies' Dispensary North Sydney United Friendly Societies People's Prudential Benefit Society Phoenix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 12, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, Saint George's Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington, New Zealand

Diary for the Month.

JAN. 15.—New South Wales Branch, B.M.A.: Ethics Committee.
 JAN. 22.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 JAN. 23.—Victorian Branch, B.M.A.: Council.
 JAN. 25.—Queensland Branch, B.M.A.: Council.
 JAN. 29.—New South Wales Branch, B.M.A.: Organization and Science Committee; Medical Politics Committee.
 FEB. 1.—Queensland Branch, B.M.A.: Branch.
 FEB. 6.—Victorian Branch, B.M.A.: Presentation of Balance Sheets, 1923.
 FEB. 8.—Queensland Branch, B.M.A.: Council.
 FEB. 8.—South Australian Branch, B.M.A.: Council.
 FEB. 13.—Tasmanian Branch, B.M.A.: Branch.
 FEB. 14.—Brisbane Hospital for Sick Children: Clinical Meeting.
 FEB. 20.—Victorian Branch, B.M.A.: Council.
 FEB. 22.—Queensland Branch, B.M.A.: Council.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and book-sellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad per annum payable in advance.